1: Gifford E-4,5 (1920-1921) 1929 OU9 Tonga OU9

Lutui was the grandfather of the present Lutui. Veamalohi or Tokelau Malohi was the ancestor of Tea of to-day. 423 173

INHERITANCE OF PERSONAL PROPERTY

Wealth (*koloa*) took the form of mats, tapa, and other manufactured articles. When a man died his *koloa* was divided by his father's sister (*mehekitanga*) or his oldest living sister, among the near relatives on both sides of the family, the sister's son receiving the biggest share. Sometimes the relatives came and picked out what they wanted. All *ngatu* tapa and *ngafingafi* mats were buried with the dead. This buried wealth is called *koloa kekekele*. 428 [764]

ADMINISTRATION

The north-south trend of the Tongan archipelago renders communication easy during the time that the Trade Winds blow. Wilson (66, p. liv) says that most, if not all of the islands, were regularly visited by the "sovereign or commander in chief" and that the rulers kept in touch with the rank and file of the population in remote islands, not only through the local governors and stewards, but also by personal visits. Much the same scheme prevails in modern Tonga, for occasionally the sovereign, and more frequently high officials such as the chief justice, voyage to the parts of the kingdom remote from Tongatabu. 643 484 [132]

Although commoners had absolutely no voice in governmental affairs they were assembled in what is called a *fono*, to hear orders from the chiefs. Anciently the *fono* was employed as a means for telling the people what to do in connection with work or war. Every adult in a district had to attend. At such gatherings the chiefs and their matapules did the talking; commoners could not speak and had no representatives. Such also is the practice in modern Tonga. Chiefs and sometimes matapules had a voice in decisions, though usually it was the duty of the matapule merely to convey the chief's orders to the people. It is obvious that a Tongan *fono* was different from a Samoan *fono*, which was a deliberative parliamentary gathering. 621 643 642 565 622 [641] [624] [624] [171]

The chiefs of the Hihifo district of Tongatabu would have an independent *fono* so far as work in Hihifo was concerned but would probably consult the chiefs of the Hahake district and the Tui Tonga in a subject concerning the whole island, as for instance, war. 622 621 643 634

There were meetings (*fakataha*) of chiefs and of matapules to discuss arrangements for various undertakings, such as a funeral feast. A meeting of this nature was not a *fono*. 622 624

Compulsory labor (*fatongia*) dates from early times. No pay was given but apparently food was supplied It was a sort of corvee system 466

8: Collocott & Havea M, I-5 (no date) 1922
OU9 Tonga OU9

another but none of them enduring long. The same expression is also used, for example, for the rattling of the lid on a pot of boiling water. 539 821 183

301. Kai tae tala: Eating without telling.

Apparently this indicates primarily one who quietly takes food and eats it without inviting anyone to share it with him, or perhaps one who takes and eats food that belongs to another without saying anything to the owner. The expression is used now only of a wind that comes up suddenly without warning, although in this sense, of course, it is capable of a wide range of metaphorical employment. 539 264 422 [821]

302. Lau matangi fai i fale: Reckoning wind done in house.

Statements made by those who have not taken the measures necessary to ensure that their opinion is worth hearing. 539 821 [571]

303. Tokelau i fale: North in house.

Used of one who sitting inside a house talks about the wind, that it is north or south, without going outside to see how it actually is. So used of the man who freely gives his opinion about matters whose true state he has not the means to ascertain. [829]

304. Toka mono agai: Prepared with (for ?) its opposite.

A wind which blows in one direction but is certain to go around to another quarter, as do the strong gales that sometimes blow in Tonga during the summer months. Generally of things and circumstances that are bound to shift and be of a character opposite to that which they were at first. [132] [183]

305. Hala pe Vai ka ko Vai: The rain has missed but there will be rain. 539 821 805

Vai-mua (Earlier rain, or water) and *Vai-mui* (Later rain, or water) are the names of two moons in the Tongan calendar, corresponding roughly to February and March. If the rain expected in the former of these two wet months fails to appear there is still the later wet month to look for ward to. It is a counsel of courage, bidding us not lose heart immediately on the failure of one expected opportunity. [132]

306. Tanaki kai fai ki Vai: Collecting food for *Vai*, the rainy months, about February or January and March, when the native food supply is low. 539 261 183

This is an expression of careless indifference, almost of reproof, to deter one who desires to save food for another time. Why save? Let the lean months look after themselves. [132]

307. Ka ai ha ofa pea tali ki Uluenga: If there is any kindness (to do) then wait till Uluenga. 539 571 183

Uluenga is the name of one of the Tongan divisions of the year, about October or November, when the food supply is scanty. The idea, therefore, [805]

9: Collocott M-5 (no date) 1922 OU9 Tonga OU9

three generations since this happened" or "It occurred when my father's father was a child."

A general word for long ago, ancient times, is *onoaho*, as *onoponi* is used for recent time, the present age. There are several expressions for remote antiquity, as, *Hau o Momo* (when Momo was king), *Hau o Tuitatui* (when Tuitatui was king), *Hau o Muni Matamahae* (when Muni of the Torn Eye was king), *Hau o Motuku Veevalu* (when Motuku Veevalu, literally Eight-legged, was king). There are of course other words meaning uncountable, long enduring, which may be used to express the same idea of remotest antiquity.

SEASONS AND MONTHS

The Tongan year is said to have begun at about the same time as the Christian year, though no satisfactory explanation is given. Gill[11] states that the Mangaians begin their year about the middle of December, the point of departure being marked by the appearance of the Pleiades on the eastern horizon just after sunset. This or some similar astronomical phenomenon may possibly have determined the beginning of the Tongan year.

The two broad divisions of the year, in one of which the days and nights are cooler than in the other, were recognized and used to classify seasons. Close observation of the habits of plants and of animals provided a basis for more exact division. The times when certain trees cast their leaves, flowered, or bore fruit were utilized in making the calendar, as were also the periods when particular fish appeared. The greatest importance attaches to the various stages of the growth of the yam. A large part of the nomenclature of the moons is based on seasonal changes observed in this plant.

The normal year consisted of twelve months, though some years had thirteen. The nomenclature is largely agricultural, but there seems no reason to doubt the statement that the names were applied to the moons. The months and the commonly received explanations of their names are as follows:

[11] Gill, W. W., Myths and songs from the South Pacific, p. 317, London, 1876.

9: Collocott M-5 (no date) 1922 OU9 Tonga OU9

1. **Liha-mua:** Early nit, December-January. This is the time when the first planted yams are forming roots. At this stage of growth little protuberances or roughnesses, like nits, appear on the heads of the roots. The name is also explained in a more general way. Many fish spawn at this time, and many trees show tiny fruits. A word for little things is nitlike, *ngalihaliha*, and the month is said to be so called because many things are "nitlike" at this period.

2. **Liha-mui:** Late nit. January-February. All the yams, late as well as early, show the little nitlike protuberances.

3. **Vai-mua:** Early rain (water). February-March. The first rainy month.

4. **Vai-mui:** Late rain. March-April. The second rainy month.

5. **Fakaafu-moui:** Putting forth living shoots. April-May. This is a time of vigorous growth with healthy suckers and shoots appearing on many plants. The word *afu* applies especially to the suckers of the *hiapo* (paper mulberry), but is also used more widely. The *fuji* (plantain) and *fau* (*Hibiscus tiliaceus*) should now be planted.

6. **Fakaafu-mate:** Dead, dying, suckers or shoots. May-June. Suckers are now not so vigorous, and dead tops of the yams appear.

7. **Hilinga-kelekele:** Laying earth, that is, either laying of earth or laying on earth. June-July. This is the month in which to start digging the yams. One explanation of the meaning of the name is that the harvested yams with earth adhering to them were laid on platforms constructed in suitable places, as under a tree or in a house, and that the name owes its origin to the fact that the adhering earth was laid down with the yams. Another explanation is that the yams were taken up and laid on the surface of the ground. The two interpretations are not inconsistent, for yams laid on a platform might still be said to be put on the ground. The name itself does not convey a precise meaning.

8. **Hilinga-meaa:** Laying *meaa*. July-August. This is the time to dig and store the remaining yams. These late yams are the biggest, and a portion of the garden is reserved for the special sorts of yam which grow to the largest size. The literal meaning of *meaa* in this place is doubtful. An explanation connects the word with *umea* (clay), and is to the effect that the big yams grow down into the clay which adheres to the roots when dug: but this interpretation is more than doubtful.

9. **Aoao:** August-September. The literal meaning of *Aoao* is obscure; a derivation for the name has been suggested which connects it with *hau-aoa*, used of rotting yam seed. The time for cutting yam for seed is now over, and it is said that if seed be cut in this month a considerable proportion of it will rot.

10. **Fuufuunekinanga:** Full leafiness. September-October. The yams, which have been planted about June and July, are now in full leaf.

11. **Ulu-enga:** Yellow head. October-November. This name is referred both to sea and land. Several sorts of fish are at a stage in their

blow at the time of, or immediately after, heavy rains when the ground is soft and consequently the roots of the trees have little grip in the muddy, yielding soil.

THE VILLAGE

Pangai village is a relatively self-contained economic unit. The villagers look upon their village as their chief source of satisfaction for both work and play. There is, of course, continual coming and going between Pangai and other nearby villages. On the half dozen times each year when the banana and tourist boat calls at Neiafu (population in 1931, 1610 people), many Pangai people, men mostly, congregate in Neiafu to see the sights and to gossip with relatives and friends from other villages. Each year a few youths from the village go off to school in Nukualofa, capital and chief port of the Kingdom on distant Tongatapu, 170 miles to the south. They travel by small motor vessel or more hazardous cutter. Sometimes they return to Pangai for the annual vacation. Often they stay with relatives in Tongatapu until their schooling is finished. Adults rarely make the journey to Tongatapu. For the most part they stay in the village, relieving monotony by occasional visits to Neiafu.

The map of Pangai village (Fig. 2)[1] sketches the lay-out of house-lots which together take up an area of about 20 acres. There are four church buildings. One of these is of European, church-like form; another is a small simple four-square board structure; the remaining two are Tongan-style architecture. The school-house is a small frame building, bare inside and out. The children sit on the floor. The community bark-cloth-making house stands next to the school-house. It is a larger frame building that stands empty and unused most of the year. The two stores are again small frame buildings with large copra-drying platforms and small copra storehouses alongside.

The style of house common in the village is also indicated on Figure 2. Of the 50 dwelling houses, 36 or 72 per cent. are Tongan style, 14 or 28 per cent. are European frame houses with iron roofs. Most of the Tongan style houses are built according to old-time native practice with coconut-sheet wall-screens and coconut mat thatching. A

[1] [See category 116, p. 9--Analyst]

13: Beaglehole & Beaglehole E-5 (1938-1939) 1941
OU9 Tonga OU9
Vavau
Pangai

512 The routine as given is for days during the month of January. It is not to be supposed however, that this routine varies greatly for different times of the year. There are no (132) marked seasonal changes in the Tongan climate except the change from a dry to a wet season. This change does not (241) affect the growth of plants to any degree. Hence the villager is cultivating for most of the year, and when he is not 512 cultivating, he is planting. Annual festivities such as Christmas and New Year celebrations, missionary-confer- 527 ences and the like mean a certain crescendo of economic activity because feasting and resting and then more feasting are approved Tongan methods of celebration. This kind of holiday-making can only be prepared for by extensive and increased pre-holiday working activity. Otherwise, as has been stressed, the daily routine is, by and large, the yearly routine.

512 So far we have been considering the daily routine of the villager in terms of the classified statements of a table. In 128 order to give some indication of what this daily routine means in the life of the villager, the following notes are taken from field-notebooks. They serve to show the contrasts between day by day work on the one hand and the activities centred round special celebrations on the other.

512 This is the way life runs in the village today: Bovai is holding a working-party to clear the weeds from his pine- 461 apple plantation. Many men are busy there today—his 476 friends from the Catholic church and his male relatives. They finish work in the early afternoon and then come back (574) to Bovai's house where he has ready for them a large oven-baked feast. Bovai finds this a good way to get large amounts of work done. The men enjoy this kind of work for a change. It is much more sociable, friendly, and satisfying than sweating away alone in the bush with only the persistent mosquitoes for company.

512 Hausia is taking no part in this working party. He is working with the men of his own household on his own 461 plantation. The men take time off during the day to make 592 for themselves an elaborate feast in the bush. One of the 512 boys comes back to the village bringing with him a few baked (574) *taro*-corms and some pieces of baked *manioke*. This snack (262) is for Hausia's wife and the girls of the household who are

21: Simkin U-5 (no date) 1945 OU9 Tonga OU9

without spelling, probably owing to deficiencies of potash. There are no minerals in Tonga, and no forest resources of value.

The islands in the volcanic chain are of little account. Only Niua Fo'ou, Niuatobutabu, and Tafahi are large or safe enough to be peopled, and they contain less than a tenth of the population. Two of them, however, have attracted some fame, Niua Fo'ou because of its Tin-Can Mail, and Falcon Island because of its periodic disappearances. This jack-in-a-box island is associated with an active volcano, whose eruptions occasionally leave a raised surface of ash and scoria which sea and rain later wash away.

The eastern chain is divided into three groups, Tonga Tapu in the south, Ha'apai in the centre, and Vavau in the north. Tonga Tapu contains about half the Kingdom's habitable area, and half its people (16,234). Ha'apai has nearly the same population as Vavau, but less than half its habitable area.[2] Each group has a serviceable port, Nukualofa in Tonga Tapu being the most important and also the capital.

Climatically[3] the Kingdom is well favoured, since it lies in the zone of the southeast trades, and has no orographical obstructions to cause rain and high humidities. The tropical Niuas have much the same rainfall and temperature as Apia and Suva, but the other groups have

[2] The following statistics illustrate the size, distribution, and density of the population (1939 Census)

Group	Population	Tongans	Habitable Area	Persons per sq. mile	Percentage of Tongans
			sq. miles		
Tonga Tapu	16,234	15,324	134.8	120	47
Ha'apai .	7,483	7,383	24.3	308	22
Vavau . .	8,199	7,957	56.1	143	24
Niuas . .	2,214	2,198	20.6	108	7
TOTAL . .	34,130	32,862	235.8	145	100

[3] The following climatological statistics (supplied by the Director of Meteorological Services, Air Department, New Zealand) illustrate in outline Tonga's principal climatic characteristics:

	Nukualofa	Vavau
Annual mean sea-level pressure (mbs)	1014	1013
Annual mean air temperature (°F)	74	78
Annual mean daily maximum temperature (°F)	80	82
Annual mean daily minimum temperature (°F)	68	72
Average annual rainfall (ins.)	63.45	77.57
Percentage of winds between south and east	72	68
Average wind force in morning (m.p.h.)	8	6
Average wind force in afternoon (m.p.h.)	10	7
Annual average relative humidity (a.m.)	79%	77%
Annual average relative humidity (p.m.)	73%	—
Annual mean of sea temperature (°F)	77	79

21: Simkin U-5 (no date) 1945 OU9 Tonga OU9

temperatures 5° to 10° lower, and rainfalls 25 per cent to 50 per cent smaller. Except in the Niuas, hurricanes are rare.

Earlier Social Conditions

Accounts of the social condition of Tonga as they found it have been given by various European explorers, and particularly by Cook. He describes a rather idyllic land, fertile, well-cultivated and well-roaded, inhabited by an intelligent and friendly people, skilled in husbandry, boatbuilding, and in the manufacture of tapa cloth. The social organisation of the country was a simplified feudalism mixed with elements of an earlier patriarchalism. A central government exercised authority over the chiefs, who held land from the Tui Tonga on feudal terms. In turn they allotted holdings to their people, exacting from them fealty, labour, produce, and war service when required. These allotments were not grouped around villages, but were more or less uniformly distributed over the chiefs' plantations as fenced farms. There were no limits to the demands a chief might make, but respect for public opinion, and the complex blood relations between him and his people prevented any serious and systematic exploitation. Cook, at least, was impressed by the peaceful, prosperous and happy condition of the Tongan people.

But this state of affairs was not to last. Tongan chiefs became involved as mercenaries in the Fijian wars, and fired by their neighbours' example, they plunged their country into half a century of civil strife. Chiefs warred for independence or mastery. Prosperity dissolved with peace, and a quarter of the people died through violence or famine. In the general social chaos old institutions collapsed and new ones arose. The old plantation economy gave way to villages as the people were driven by the need for protection to group themselves around fortifications. Christian missions became established and the old Tongan religion crumpled before their wholesome conversions. At first they were a new factor of division in the heated contentions of the chiefs, but in the end they helped to close the long agony of civil war, and to build modern Tonga.

The outstanding personality in the last stages of the civil wars was Taufahau, honoured by his people as the greatest Tongan. He pacified Ha'apai and Vavau in the late thirties, revived their agriculture and secured their conversion to Christianity. Appealed to for protection by the Christians of Tonga Tapu, he invaded it. This led to the pacifica-

22: West M-3 (1846-1855) 1865 OU9 Tonga OU9

CHAPTER III.

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THE first Sight of the Friendly Islands—Reef Navigation—A Romish Pilot—Nukualofa—Safety of the Roadstead—Description of the Town—Structure of Native Houses—Arrival of the Royal Fleet—Strange Appearance of the Canoes in the Distance—Description of their Structure—A remarkable Escape at Sea—Manner of Arrival or Departure on a Folau, or Voyage—Debarcation of King George and his Chiefs—Personal Interview—Outline of King George's History—Native Pedigrees—The Tuitogans—Their Abnegation of Power—Succession of Tonguese Kings—Josiah Tubou—His Death, and the Accession of King George—His Age—Early Escape from Drowning—Subsequent Career of the King—The first Sabbath in Tonga—Departure for Vavau—Haabai—Tugua—The Rev. William Webb—Remarkable Deliverance from Immisent Danger—First Trip in a Native Kalia—Lifuka—Arrival in Vavau.

132

IT was early one lovely tropical morning when we gazed for the first time on the dim outline of Tongatabu and its surrounding islands. The previous night had been oppressively sultry, and we needed no second invitation, when, at break of day, the cry of "Land! ho!" summoned us away from the suffocating atmosphere below deck. There was not even a morning cloud in the sky, and the grand orb of day rose in unrivalled splendour. The ripple at the bow of the "Triton," and the subdued surging of the waters as she glided along, seemed to be more lively and inspiriting than usual. Every thing appeared preternaturally bright and invigorating. The sun was just high enough to bathe the surface of the ocean in golden glory, without any of the intensity of his meridian heat. Rainbow colours danced and sparkled on the broken crests of the waves, and the morning light brought out in sharp relief the outlines of islands on either side of the ship's course.

[p. 39]

[pp. 1-38 not processed]

22: West M-3 (1846-1855) 1865 OU9 Tonga OU9

average, in the course of a year, twenty-five rainy days, one hundred and twenty-three showery days, and two hundred and eighteen fine days. This average may be safely taken to indicate the comparative fall of rain in the Friendly Islands; with the exception, perhaps, of the rainy season, when a larger amount of rain falls in Tonga than in the islands that are so much further north. Although seasons of extreme drought, extending over even five or six months, have been known; yet, as a rule, rain falls equably over the entire year. At the same time it will be observed that the number of fine days might well put any one thoroughly out of love with the damp and changeable climate of England. The rainy months are, December, January, and February. The rains during that season are heavy, and frequent, although never of very long continuance. Hence, in these months, as well as in all the others, there are very many fine days. The only drawback is, that their fineness is accompanied by excessive heat.

The general climate, judging only by the range of latitude within which the islands lie, might be thought less extreme than it really is. The average temperature, during the entire year, is about 76°. During the hot months, from December to March, the thermometer frequently ranges at 90° and even 96° in the shade. This high temperature is accounted for, in part, by the flat and low character of many of the islands, and by the consequent absence of the alternating land and sea breezes which fan the Fijian, and other of the more extensive Polynesian coasts. The atmosphere is, at all seasons, extremely humid, entailing exhausting and enervating effects upon the

[i.e., the annual average of twenty-five rainy days, one hundred and twenty-three showery days and two hundred and eighteen fine days as reported for the Samoan Islands--Analyst]

22: West M-3 (1846-1855) 1865 OU9 Tonga OU9

132 European constitution. In the height of the hot season, the humidity also becomes proportionably increased. One seems to live in a vapour bath all the day long. It must, however, be stated, as a set-off against this, that the resident, in any of the Tonga islands, has no need to dread the miasma of marshes, [164] or deadly swamps. Violent or fatal fevers are scarcely known. We are convinced that with ordinary care, and by having better habitations, the Missionaries, and other foreigners, would avoid a great many of the evils which at present result from the excessive humidity.

342 354 The houses, of the class possessed at present, are not sufficiently impervious to the outward atmosphere; while the system of ventilation is not such as to contribute to the comfort and health of the inmates. It will be enough to say, in proof of this, that there are no means of ventilation in any part of the high thatch roof of a Tonguese house. Hence, to secure the ventilation absolutely necessary for ordinary health, the walls themselves have to be made of open reeding or wattle-work. All the air, therefore, that is admitted, enters and departs below the eaves, that is to say, through the walls up to a height of seven or eight feet. Through these walls the damp, and cold rains and dews, easily strike into the interior, rusting everything in the shape of cutlery, and necessitating also a regular exposure of wearing apparel to the sun, to free it from the damp and mould, consequent upon even a few days' neglect.

342 797 Such houses cannot be healthy; and although the Missionaries have been content to occupy them, on the score of economy, it is an economy liable to very grave objection and doubt. Nothing that

22: West M-3 (1846-1855) 1865 OU9 Tonga OU9

132 fact is, the heavy rain soon saps the foundation of the large posts upon which the security of the building depends. Gradually the wind sways the superstructure to and fro, and at every gust, opens and widens the earth around the sockets of the posts, until the entire fabric loses its equilibrium, and coming down with a crash, all its posts and beams, however tough and thick, are snapped like so many carrots. Nevertheless, instances have been known in which posts, two fect in diameter, were broken off short by the surface of the ground, where their sockets had been imbedded in solid rock.

133 All the islands are subject to earthquakes, which are both frequent and violent. This might naturally be expected from the proximity of so much continuous volcanic action; but their occurrence produces very little alarm. The native buildings cannot be overthrown, and hence, beyond the awe with which the earthquake is calculated to inspire every mind, there is no sense of personal insecurity. Although they are, at times, so violent as to detach large portions of stone from the face of the cliffs, we never heard of any fatal, or even disastrous, consequences resulting from them. One of the gods (some say Maui, and others say Lofia,) is said to be reposing in the heart of the volcano at Tofua, and that the earthquake is either caused by the excessive nodding of the deity, or by the act of turning from one side to the other, when too much irritated by the effects of his fiery bed. Whichever it may be, the natives invariably raise a great shout, during the continuance of the tremulous motion, for the purpose of thoroughly awaking the Plutonic diety, lest his nodding and uneasi-

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776
823

22: West M-3 (1846-1855) 1865 OU9 Tonga OU9

159 563 797 793 professed Christianity; and, after a while, was truly converted. His heathen relatives then tried by various means to force from him a recantation of his religion. But, rather than yield before their persecutions, or to their persuasions, he embraced an opportunity that presented, of making his escape to the Friendly Islands, where he knew he would be permitted to worship God in peace. Although often solicited since then to return to Lakemba, where he would at once be assigned no mean station among the ruling chiefs, he has steadily refused; preferring rather to hold the sacred office of a Minister in the Church of Christ, and to labour for the spiritual benefit of the people amongst whom his early religious impressions were fostered and ripened into maturity. Faubula was a great favourite with us, in all our Missionary boating expeditions. He was intrepid, skilful, and hearty. He was also possessed of a fund of natural vivacity and wit, which enabled myself and the boatman, who always accompanied me, to pass pleasantly many an hour upon the sea, under a blazing sun, which otherwise would have been wearisome enough.

159 797 157 563

797 [794] Vavau contained, when we arrived, nearly three thousand church members. There were thirty-two preaching-places, seventeen of which were reached by water. The others varied in distance, from the Mission station, from two to ten miles. Having no horses, at that time, the labours of the Missionaries were extremely exhausting. The inland journeys were commenced before sunrise, and pursued during the cool of the morning; but, whilst thus avoiding one evil, another was encountered, equally great, if not worse. The roads, in most places, were no better than footpaths through the long

[491] [132]

22: West M-3 (1846-1855) 1865 OU9 Tonga OU9

grass and brushwood; and, everything being saturated with the heavy dew of the previous night, one could not proceed far on a journey, before being thoroughly drenched. Indeed, it would have been quite as comfortable, in some instances, to have waded through a river, as to push a way through the long grass, and other prolific vegetation encroaching upon the road, laden with glistering dew. The arrangement for a Sunday's work, was usually something like the following:—Breakfast about four A.M. Then walk to the most distant place for the day, say nine or ten miles. Preach there at nine o'clock. Refreshment after service, and then a walk of a few miles, under a vertical sun, to the second preaching-place, where service would be held at one o'clock P.M. From thence another village would be reached, in time for a third service, about four o'clock P.M. All this done, the exhausted man would arrive at home again, a little after sunset. Destructive as these labours were of health, in such a climate, they were the necessary result of two men attempting to do what would have fully taxed the strength and time of even four.

Such are the circumstances under which oftentimes the cry comes from distant Mission-stations for additional help. A Missionary brother, more vigorous than his fellow-labourers, is left standing alone at his post, after all the others have been removed by sickness or death. He only out of the number is left to pastorize the famishing thousands around. Innumerable cares of the churches crowd upon him; journeys are multiplied; religious services are increased; the very hours of necessary repose are diminished; while, in a variety of ways, the

22: West M-3 (1846-1855) 1865 OU9 Tonga OU9

[Niua Tobutabu]

It is, nevertheless, remarkable that, even before that time, the people of Niua Tobutabu were exceedingly anxious to spread the religion which they themselves had just received. They longed to carry the glad tidings to their neighbours and friends of Niua Foöu. Above ninety miles of ocean, noted for its storms and heavy seas, rolled between them, where many a canoe had perished while attempting to make for either shore. But the restless desire grew stronger and stronger; and, finally, the necessary arrangements were made for a Missionary visit to the island in question. Two canoes were prepared, and manned by about one hundred and fifty persons. The expedition was headed by the King of Niua Tobutabu, and it was accompanied by a teacher from Vavau. The distance ought, under ordinary circumstances, to have been run in a single day; but, shortly after starting, the winds became adverse and tempestuous, and for six days the canoes were driven hither and thither. Niua Foöu had been sighted for several days, but could not be reached. The storm, meantime, increased in fury. The sea ran mountains high; and, at last, one of the canoes was overwhelmed, and foundered. It contained about one hundred persons, of whom seventy were drowned, the others being rescued by the second canoe. Among those who perished was the Vavau teacher. His body was afterwards washed on shore, and when found, his hand still grasped, in the rigour of death, a bundle of Scripture Books, from which he was not parted even in his watery grave. We may well believe that, by the precious truths he was so anxious to carry to others, he himself was strengthened in the hour of awful calamity and death.

22: West M-3 (1846-1855) 1865 OU9 Tonga OU9

he himself, in his high sphere as a king, became a Christian evangelist, and how largely and effectively he employed the labour of his own subjects in the vineyard of the Lord. But how was he taught this great lesson? How did his proud and haughty mind become docile, and submissive, to instruction and spiritual guidance, even from an inferior among his own subjects? Let us consider how this change was brought about.

After rejecting the offer of a native teacher, Taufa-ahau, like Naaman of old, went back to his home greatly disappointed, if not wroth, and saying in his heart concerning the Missionary for whom he had sought, "Behold, I thought, he would surely come out to me, and stand, and call on the name of the Lord his God." In this chafed spirit he sailed for Haabai; himself, or, at all events, his heathen crew, still invoking the propitious aid of heathen deities for the voyage. A storm, however, arose, of no ordinary description, and, for two days, it was doubtful whether the canoe would ever reach the land in safety. That outer storm produced another of a different sort, and of even greater moment, within the soul of Taufa-ahau. He set it down as a Divine judgment upon himself for rejecting the offer made by the Missionaries of a native teacher. Having reached Haabai after great exertions, it was not long before he revisited Tongatabu, chiefly for the purpose of asking for the very man whom he had formerly rejected. With him he returned to Haabai,—a heathen still, but an earnest and humble inquirer after truth.

Peter Vi was the honoured man whom the Missionaries employed as the very first native herald of salvation among his own people; and he it was

31: Nayacakalou E-4,5 (1957-1958) 1959
OU9 Tonga OU9

The land is low-lying and absolutely flat as most of the island of Tongatapu is. Without hills to trap the rain clouds the rainfall is not copious, so that the land, which is highly fertile, is fairly easily worked. The flatness of the country is fully reflected in maps of *api* which appear as neat little squares formed almost by drawing straight lines from one side of the island to the other.

4—Acquiring an *API*

How does a man set about acquiring an *api*? The commonest way is through inheritance, the rules for which have already been referred to.[20] But for those who cannot inherit, the usual thing done is to wait for an *api* to become vacant. A man then approaches the chief, either directly or through someone related to him, or the Town Officer, to obtain approval for occupying the vacant *api*. Once this is granted, approval by the Lands Department is pretty well assured, and all that remains is to complete the formalities.

For those who come from a different area the business of acquiring land is much more difficult. They may have to 'sit around' in the village for a considerable time before an *api* finally becomes available for them. They could try, of course, by applying directly to the Lands Department; but this is in any case subject to there being enough land to go round in the locality concerned. In every case, considerable influence is exercised at the local level, and the role of hereditary holder of the *tofia* cannot be over-emphasised.

This is the general framework within which a man operates in the business of acquiring land. At this point I would like to quote the cases of three men who were interviewed on this subject:

A

I come from Niuafo'ou, and am using X's *api* to support both his family and mine. He has another *api* in M but does not use it. He is old and retired now. I am not related to him, but when I first arrived here I went and asked him if I could use his land as he was of the chiefly family and might have been able to help me get land (the chief was not here at the time). He agreed and I have been using his *api* since . . . I did ask the chief for an *api*, but there is none available. I said I would try at E, but the chief said he would let me have one as soon as it becomes available.

B

I am now living here with my wife and my grandson. I have only one daughter who is married in this village. I have no *api* of my own, but I share the use of her husband's *api* with him, and also use some of V's land. I have my own *api* in Vava'u where I have sons who are using it at present. I have not sold any cash crops from V's land because I just started using it in June. I have planted some bananas there, but the first crop is not yet ready. I do sell bananas from my daughter's husband's land, and the largest number of cases I have packed is about 5. I have no *api* because none is available for me. I am undecided whether to stay here permanently; of course I would like to

[20] See p. 100.

42: Walsh K-4,5 (no date) 1970 OU9 Tonga OU9

population movement and the rapidity and extent of its growth since 1956 are likely to have important consequences which will bear heavily on traditional political, social and economic customs and practices throughout the kingdom. Until the mid-1950s, population movement was more especially to rural Tongatapu rather than to Nuku'alofa. Thus during this period (1931-56) Nuku'alofa's annual growth rate (5.2 percent) was less than that of rural Tongatapu (6.3 percent), but since then the growth rate of Nuku'alofa (7.4 percent) has exceeded that of rural Tongatapu (5.3 percent). The most urban part of the town, Kolofo'ou, grew at an even faster rate (8.6 percent) while nearby Havelu Loto, the centre of the only sizeable industry on the island,[17] grew at the fantastic annual rate of 35.7 percent between 1956 and 1966. Where village growth exceeded or nearly approximated that of Nuku'alofa, it was either in very small villages, where an influx of a handful of settlers would give apparently spectacular increases, or in settlements to the centre and east of the island for reasons noted above. In 1956 Nuku'alofa contained 29 percent of Tongatapu's population and 16 percent of that of the kingdom; in 1966 these percentages had risen to 33 and 20 respectively.[18] This demonstrates both the increasing importance of Nuku'alofa in terms of total population and the marked tendency for population movement to Tongatapu to be urban-orientated.

Factors *pushing* people out of the outer islands and *pulling* them towards Tongatapu and Nuku'alofa are: the greater opportunities for social mobility in recent years: the changing economic needs of the average Tongan; easier transport between islands; and, more recently, the advertising (over the Tongan radio) of the attractions of Nuku'alofa; overpopulation; land tied up in title disputes and in other ways kept back from distribution; the low price for copra; two hurricanes in the northern islands in 1961 and 1963; and the decimation of the banana by black leaf streak and other diseases in Vava'u. If one single cause can sum up these various and interrelated factors, it is the need for money.[19]

It is not possible to know which islands and villages have recently contributed most to Nuku'alofa's growth, for the 1966 census contained no special statistics on towns. The following remarks, therefore, are based mainly on information extracted from the 1956 census sorting

[17] Quasi-government industries producing coconut by-products and furniture.

[18] Of the other two towns, Neiafu contained 23 percent of the Vava'u population in 1956 and 26 percent in 1966; the respective figures for Pangai-Hihifo were 28 and 25 percent. Neiafu grew at an annual rate of 2.5 percent; Pangai-Hihifo lost population (—0.5 percent p.a.)

[19] Walsh (1964): 179-197 discusses migrants' reasons for moving to Nuku'alofa. Some implications of these factors are discussed below. See 'Mobility and Economic Development.'

43: Maude K-4,5 (1962) 1970
OU9 Tonga OU9

SHIFTING CULTIVATION AND POPULATION GROWTH IN TONGA

by

ALARIC MAUDE

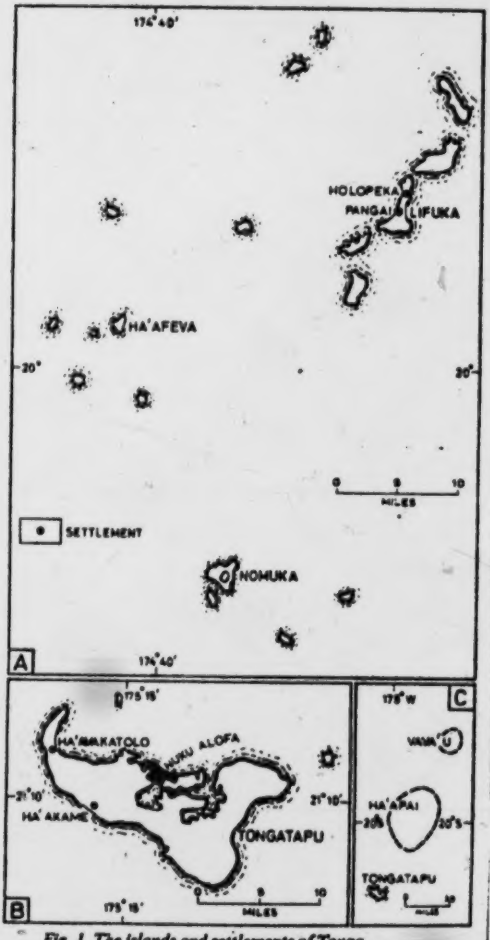
The relationship between population growth and agricultural systems has been a central question in some of the recent geographical work in the Pacific Islands (e.g. Brookfield, 1962; Clarke, 1966; Lea, 1965). This paper seeks to contribute to this body of research through a study of the effect of population growth on the agricultural system of Tonga, an island group which in common with a number of other South Pacific territories has experienced rapid rates of population increase in recent decades. The study also attempts to assess the extent to which the arguments of Ester Boserup on the relationship between agriculture and population growth can be usefully applied to the process of agricultural change in Tonga. Boserup's thesis (Boserup, 1965) essentially is that the intensification of traditional agricultural systems from long fallow to short fallow to multi-cropping occurs only when forced by population pressure, because such intensification involves an increase in labour input and a decrease in output per man-hour. She therefore regards the agricultural system as the dependent variable in the relationship between population and agriculture, and explains differences in cultivation systems as the result of differences in population densities.

THE AGRICULTURAL ENVIRONMENT

The chain of some 150 islands in Western Polynesia which forms the Kingdom of Tonga has a total land area of 256 square miles and supports a population of about 81,000 (1968). The economy is overwhelmingly agricultural, and is based largely on subsistence food cropping and the export of bananas, copra and desiccated coconut. Over 90 per cent of Tongans live in the three main groups of Tongatapu, Ha'apai and Vava'u (Fig. 1), where almost all the islands are of raised limestone formation. The climatic variable of greatest agricultural significance is rainfall, which increases from a mean of 67 inches at Nuku'alofa (Tongatapu) to

[p. 57-A]

70 inches at Pangai (Ha'apai) and 86 inches at Neiafu (Vava'u). December to March tend to be the 132



102
131
361

Fig. 1. The islands and settlements of Tonga
A. The Ha'apai group
B. Tongatapu
C. The relative location of the main island groups.

[p. 57-B]

wettest months throughout Tonga, but the seasonal pattern differs markedly from year to year. Applying Mohr's definition of a dry month (Mohr, 1944)[1] Nuku'alofa and Pangai have much the same incidence of dry conditions (with 23 and 25 per cent of all months in their respective rainfall records classed as dry), and are appreciably less humid than Neiafu with only 16 per cent of months classed as dry. 132

With the exception of some of the western Ha'apai islands, where the soils are underlain by tuff, all the soils in the three main groups are underlain by coral limestone, but the major parent material appears to be the volcanic ash which has covered all the raised limestone islands. The main soil type is a fertile, friable soil termed *kelefatu* by Tongans and varying in texture from a loamy sand to a clay. The other significant type, *tou'one*, is a sandy and less fertile soil found at low elevations near the sea, and is proportionately most important in Ha'apai. About 85 per cent of the total area of the raised limestone islands is suitable for cultivation. 134

Most of the agricultural land has been surveyed into allotments which are generally eight and a quarter acres in size, except in Ha'apai and parts of Tongatapu and Vava'u where because of the population density, holdings have been reduced to between three and six acres. The allotments are held by individuals as lifetime inheritable leaseholds, but about 60 per cent of those males entitled to land do not in fact have an allotment and either borrow the use of land or depend entirely on other types of employment (Maude, 1970). 241 423

Population distribution is uneven. In Ha'apai, southeastern Vava'u and western Tongatapu crude population densities are comparatively high and range from about 450 to 700 persons per square mile, whereas in western and northeastern Vava'u and central and eastern Tongatapu densities are around 200 to 300 persons per square mile.[2] These contrasts in population density date back to at least the nineteenth century and probably earlier and 161 162 [134]

[1]A dry month is one in which rainfall is less than 60 mm (2.36").

[2]Population densities are based on the 1966 Census (Kingdom of Tonga, 1968).

[p.58-A]

131 Tongatapu and 'Eua islands and a few smaller islets. The
131 Ha'apai Group consists of numerous small atolls. Fifteen of
162 these were inhabited at the time of the 1966 census. The
161 total area of the atolls of Ha'apai that were inhabited in
1966 is 20.1 square miles, with a population density of 521
131 per square mile. The Vava'u Group lies to the north-east
of Ha'apai. Like Tongatapu, it has a main island that gives
its name to the Group and a cluster of atolls nearby.

The distance between Nuku'alofa and Neiafu, the main towns of Tongatapu and Vava'u, respectively, is 165 miles (usually a matter of three days' journey on the government
132 passenger vessel). Within this distance the climate varies from tropical in the northern islands to sub-tropical in the south, with a mean annual rainfall of 86 inches in Vava'u and 67 inches in Tongatapu (although with considerable variation from one year to the next).

Yams, taro, sweet potato, manioc, breadfruit, bananas,
241 plantains, coconuts and watermelons are grown throughout
[184] Tonga, albeit in differing proportions in different parts of the country. Except for breadfruit, these crops yield all year round, and all but watermelons are important
241 subsistence crops. The principal cash crops are bananas,
433 coconuts and watermelons. Bananas and coconut products
[439] (copra and dessicated coconut) make up more than 90% of the value of Tonga's exports. The nation's economy is based on

46: Decktor Korn E-5 (1969-1970) 1978 OU9 Tonga OU9
Tongatapu
Motulahi

1966, but in 1969 they went to live with Lupe's family in another village on Tongatapu. 'Aisea quarrelled with Lupe's brothers, however, and the couple moved back to Motulahi to live with Viliami and 'Ana, bringing with them their two children and Lupe's sister's son (whom they had adopted in the informal fostering relationship known as pusi'aki). In February 1970 they had been back in Motulahi for about one month and it was indefinite how long they would be staying in the household.

The third married couple in the household, Mele and her husband Solo, had been living for a few years in their own single-family-group household in Motulahi, sharing the town allotment of her married brother Tomasi (the one who had his own household). However, about a week before I surveyed Viliami's household, a heavy rainstorm flooded Mele and Solo out of their coconut-thatched house (as it did a number of other households in the village). The couple and their four children (including one pusi'aki adopted by Mele before she was married) moved in to her parents' household until a new house was built for them four weeks later.

Matiu, another of Viliami and 'Ana's children, had also been flooded out of his house. His wife had gone to visit her parents on another island a few weeks previously, taking with her their two-year-old daughter. Matiu

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

the evening to N in mod[t] breezes. The weather close[a] and cloudy with some heavy showers about noon but at night pretty clear. A moderate sea. Steer'd wsw & swbw. Saw some Tropic Birds and fishes.

SUNDAY 27. *Lat.* DR 20.32 S. *Long.* DR 185.36 E. *Therm.* 75½:75½:76½:76½:76:75½. The wind SE and SSE till near noon & afterwards about E. Moderate breezes and gentler in the afternoon, but the evening increas'd again a little. The weather fine with a smooth sea. Steerd wsw till noon and then w½N, but at seven in the evening the Discovery bore down and hal'd us as they thought they saw Land bearing WbN, when we haul'd our wind to the S°ward. At half past ten we tack'd and stood to the N°ward. Cleand and smoak'd below.

MONDAY 28. *Long.* TK 185.27½ E? *Therm.* 77½:79½:79½:78:76½:77½. The wind NbW and N. Moderate breezes and at night rather gentler. The weather fine in the forenoon but afterwards duller, and in the evening a great deal of Thunder and lightning chiefly to the SW which was follow'd by some rain. A smooth sea. At three in the morning we stood to the westward close haul'd, and though we expected to see the Land at daylight it was not discoverd before nine o clock, when the Discovery made the Signal & we soon after saw it from the mast head. It soon appear'd from the deck as three small islands almost a head[1] and at noon we were within about five miles of the southermost, which as well as the others seem'd to be two miles in length and somewhat higher than Te rouggemou A'tooa but lower than Wateeoo and Savage island. We could plainly see they were coverd with trees, amongst which were some Cocoa nuts, and they had white sandy beaches but the sea broke to some distance off each end of that we were nearest. At the same time we could sea [*sic*] several more islands just appearing, some to windward some a-head & three or four on the lee bow.[2] They appeard much like the others when we got nearer, but some rather higher & one right a head made in two hummocks but about four in the afternoon in three, at which time the Island Annamocka[3] was plainly seen beyond it which seemd to be three

[a] The heat has been less severe for two days past which may be probably owing to the frequent rains we have had. Whether it may be the variable and rainy season hereabouts I cannot determine, but if so it proves these are not consequences of extensive lands, for the islands in this sea are mere points and can have little effect in producing changes of wind or weather.

[1] These were the three most southern islands of the 'Otu Tolu group, called (from south to north) Telekitonga, Telekiha'apai, and Telekivava'u. *Telaki* means 'on the way to'.
[2] These were the islands of the Nomuka group: the main ones to windward and ahead were Mango, Nomuka Iki and Nomuka; to leeward were Kelefesia and Tonumea.
[3] Nomuka.

[pp. 721-859 not processed]

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

times the size of the largest we had yet seen. The islands almost incircled us now and we tack'd standing to the NE, but at five stood back again, soon after which two Canoes one with four & the other with three men paddled towards us and came along side without the least hesitation. They brought some Cocoa nuts, Bread fruit, plantanes and sugar cane which they gave in exchange for small nails and knives. One of the Indians came on board and when they left us another Canoe came but did not stay long as night was approaching, for the nearest island was five or six miles off which was that with three hummocks, and sufficiently shows the hazard these people would run to posess a few of our triffling articles. We sounded at this time and had 40 fathom but soon after only 17, on which we made the signal for the Discovery to anchor which we did about six o clock in a bottom of coarse Coral sand with bits of shells.

TUESDAY 29. *Therm.* 75½:76½:80½:79:78:76½. The wind about N except part of the forenoon when it chang'd suddenly and came from wsw with a great deal of heavy rain. The rest of the day moderate breezes with the weather dull or cloudy and a sultry air. About five in the morning we sent two boats to the nearest island which lay in our way and was that mention'd last night, that they might purchase vegetables and meet us as we came up to it. Soon after we weigh'd and stood towards it but made several tacks as the wind was foul, in which time six or seven canoes came from different islands and brought bread fruit, plantanes and yams which they exchang'd as yesterday evening. They also brought several fowls, a great many shaddocks, and an old man who had been on board last night made the Captain a present of a pretty large hog. Besides these they also exchang'd pieces of cloth, fish hooks, small baskets, musical reeds and some clubs, spears and bows, as well as some large wood Pigeons,[1] small rails[2] and large violet colour'd Coots.[3] They retreated when the rain was violent, about which time one of our boats return'd with a considerable quantity of bread fruit, yams, plantanes and some grass for the cattle. The other return'd soon after noon with more vegetables, some fowls and seven young hogs, so that altogether we had procurd as much bread fruit and other Vegetables as serv'd our people to day, which with an addition brought by several more Canoes in the afternoon also ennabled us to spare some to the Discovery and reserve enough to ourselves for another day. Our people were very civilly treated by the Indians at the island, who sold them the bread fruit for a bead each and the hogs for a small hatchet

[1] *Globicera pacifica.* [2] The Spotless Crake, *Porzana tabuensis.* [3] *Porphyrio melanotus.*

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

609 apiece, but bunches of plantanes or fowls were purchas'd for
489 middling siz'd nails. The inhabitants were not numerous and their
huts which were collected together and stood within a plantane walk
361 but indifferent: not far from them there was a pretty large pond of
312 fresh water, which was tolerable though not equal to what we commonly meet with in streams, of which there was not the least
114 appearance. Between two and three in the afternoon we pass'd this
133 island, the higher parts of which are not wooded and seem to be
[137] uncultivated, but it has notwithstanding a pleasant appearance. We pass'd near a reef or shoal that lyes to the sw of it and in the evening were abreast of Annamocka, but being three or four miles to leeward kept turning up as we had no soundings with less than 40 fathom which made it inconv[en]ient to anchor. The bottom was rocky & we had sometimes 55 fathom but at eleven at night 50 with the same sort of ground.

132 WEDNESDAY 30th. *Long.* TK 184.41 E. The wind from ENE to N and NBW. Moderate breezes and sometimes gentle or almost calm. The weather dull with a great deal of rain early in the morning and some
114 in the afternoon. A swell from the sw. Before day light we continued to make short boards and when that appear'd were nearly in the same place as last night, but soon after as there was but little wind we
[133] fell more to leeward. When the breeze sprung up we stood in and at eleven in the forenoon were near the shore of Annamocka eete[1] or little Annamocka, off which lye some shoals on which a high surf broke. We afterwards made several tacks and as the wind became more favourable in the afternoon we lay up for the anchoring place at Annamocka, but it failing us in the evening we anchor'd in 42 fathom coral sand and shells about two miles off shore at the WNW
114 part of the island. In the forenoon we saw two islands to the NW'ward
133 which are those call'd Kaybay and Mattafóá[a] in Abel Tasmans plate of Annamocka, where they are represented too small. The one is a
[103] single mountain of a Conic figure which has a noble appearance, and the other is pretty long and flat on the top though much higher than any of the neighbouring isles (except that just mention'd) or indeed
439 of any we had yet seen between the tropics. All the day we had several canoes, sometimes near twenty, about the ship from whom we purchas'd a great quantity of vegetables and about a dozen small hogs and pigs besides many fowls. Our trade was brisker today as

[a] Their names as told us by the natives are 'Káó and To'fooa. [Kao and Tofua.]

[1] Nomuka Iki.

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

some orders were issued out by the Captain to prohibit every person from purchasing any thing but provisions, and also appointed proper people for that purpose. While working up towards the island in the day we had from 41 to 49 fathom with a bottom of broken shells and black sand.

[MAY 1777]

THURSDAY MAY 1st. The wind ESE. Moderate breezes with dull cloudy weather and some showers of rain. Early in the morning the Master was sent in the Cutter to examine the SE part[1] of the island and in the forenoon returnd with an account of there being good anchoring and landing, but there was no water near except a small stagnant Pool and a few holes dug in the sand which had both a very indifferent sort. In the mean time we had weighd and work'd close in shore, but determin'd now to reach the anchoring place which Captn Cook had occupy'd when at this island in 1774, which though at a small distance took us till four in the afternoon before we got up, which was occasion'd by a tide or current that seem'd to set right off shore. We anchor'd in fathom a sandy bottom not a mile from the shore on the NNW part of the Island. Soon after day light several Canoes came off and at one time we had near forty about the ship, besides two large sailing Canoes that carry'd between forty and fifty men each. We purchas'd a great quantity of vegetables and in particular had more bread fruit than we could use, and several hogs & fowls in the same manner as on the preceding days, but were oblig'd to punish one of our people who already infring'd the articles made to regulate our bartering. There were several women in the Canoes that came off to day who were perhaps incited by curiosity to visit us, though at the same time they barterd as eagerly as the men and us'd the paddle with equal labour and dexterity. The Discovery anchor'd a little before us though once far to leeward.

FRIDAY MAY 2d. The wind E or EBS with cloudy weather and some showers of rain. In the morning we hoisted out the Launch and other boats and in the forenoon the Captain went on shore and agreed with the natives for the use of a hut or shed to serve as a tent and also for procuring water. In the afternoon the horses were sent on shore and at the same time a party of marines under the command of Mr King, who kept gaurd in the shade for the protection of the horses and waterers. To strengthen our party some were sent from the Discovery, and a signal agreed on between that ship and those on shore

[1] Cook says 'to Sound the sw side'.

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

in case any disturbance should happen with the natives, because she lay quite abreast of the S°most sandy beach whereas we were rather to leeward of it. There was however little reason to expect such an accident as they behav'd in the most civil manner to us (if we except their attempting to thieve every thing) and many came off and barterd hogs and Vegetables, though not in such numbers as when standing off and on, as their attention was much taken up to day with our boats going so frequently on shore.

SATURDAY MAY 3d. The wind N . Mod^{t} breezes. The weather fine with some showers in the afternoon. Our people employ'd watering & another party in cutting wood, both which the chief who is nam'd Taipa agreed to. Many of the natives traded at the ship and on shore exchanging their fruits for nails & beads as before. They also asissted in rolling down our water casks but they seem'd to understand Trade so perfectly that they would not do or give the smallest triffle unless they were paid.

SUNDAY 4th. The wind w. Moderate breezes with fine weather. The people employed in wooding and watering and a party in cutting grass for the Cattle. The indians continue to Barter their fruits but very few hogs are now brought, though several Canoes have come from the other islands. The Discovery lost her small bower anchor not from any wind or sea but the foul ground which is probably coral rock.

MONDAY MAY 5th. The wind westerly. Gentle breezes with fine weather. The people employ'd as before, but several of the party who were wooding sufferd greatly from the juice of the trees which they cut down, as it is so acrid that when they wip'd their face with their hands it inflam'd their Eyes so as to make them incapable of working & had the same effect on some other parts. They erroneously suppos'd it to be Manchineel for it is a species of Pepper and grows plentifully every where towards the shore. The trees are of no great size & the twigs when broke distill a great quantity of a milky juice. It is calld Fait'anoo[1] by the natives & may easily be known by trying if it has the milky juice or from its rounded leaves almost like a [2] tree.

The Discovery found her anchor again, but her misfortune made us examine one of our Cables which we found unhurt. The Gunner was employ'd as usual in bartering on shore for provisions & purchas'd a good many Yams and several hogs which came from some of the other isles. We found that though Taipa or Kaipa was the person

[1] Feta'anu, *Excoecaria agallocha*. It is common in Tonga in thickets near the sea.
[2] 'Manchineel' was presumably the word that slipped Anderson's pen.

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

who acted chiefly on the part of the Indians, he is not chief of the island but another person nam'd Toobou. We plainly saw the smoke rising from Toofôâ which is a volcano but it was constantly varying in quantity and seem'd to proceed from near the middle of the island.

TUESDAY MAY 6th. The wind SSE. Gentle breezes with fine weather. The people employ'd in looking at the other Cable and steadying the ship from swinging in shore with another anchor. The rest employ'd as usual. Few Canoes off to day but trade was carried on as before on shore.

The Captn brought off a person nam'd Fee'nou who says he is chief of the Island Tonga'taboo or Amsterdam. We found he arriv'd yesterday and was probably sent to as soon as we arriv'd, for his consequence seems much greater than that of any person here as they pay him the greatest respect, and many as a mark of submission bow their head and touch the sole of his foot with it afterwards, doing the same with each hand, first with the palm and then the back part. He is a tall man about 30 but rather thin, and has more of the Europæan features than any we have yet seen here. The Captain presented him with a gown of printed linnen and some other things to engage him in our interest which he was well pleas'd with.

WEDNESDAY MAY 7th. The wind SSE. Moderate breezes with fine weather. The people employ'd as usual and the Indians continue to trade though not so briskly as formerly. The Discovery on heaving short to shift her birth into better ground lost her best Bower anchor and had near fallen on board of our ship, as they got foul of our Cable in bringing her up, but afterwards got clear and anchor'd a quarter of a mile or more to the westward of where we lay & rather farther in.

THURSDAY 8th. The Thermometer at noon . The Barometer . The wind .

FRIDAY MAY 9th. The wind Etly. Fresh breezes with fine weather. An Indian of some consequence who was with Fee'nou stole [1] on board for which he was severely flogg'd, then had his hands tied firmly behind and was carry'd to the place where we traded on shore but not releas'd till a large hog was brought for his ransom. I am far from thinking there was any injustice in punishing this man for the theft, as it cannot be determind what might be the consequence if such practices had been permitted, but that he should be confin'd in a painfull posture for some hours after, or a ransom demanded after proper punishment for the crime had been

[1] According to Cook, he stole 'the bolt belonging to ye Spun yarn wench'.

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

inflicted I believe will scarcely be found consonant with the principles of justice or humanity upon the strictest scrutiny.

SATURDAY MAY 10th. The wind from E to NNE. Fresh breezes with cloudy weather and a considerable swell so that no Indians came off today, but they continued to trade on shore and amongst other things we bought a hawks bill turtle of about 30 Lb weight.

SUNDAY 11th. The wind SSE. Fresh gales with cloudy weather before noon and some rain, thunder and lightning in the morning but afterwards clearer and more moderate. No Canoes came off the weather was so bad. In the forenoon we got off the horses and in the evening the other things with the party of Marines, three of whom were punish'd on shore for negligence. On heaving in the best Bower the service was found broke and the Cable a little damag'd.

MONDAY 12th. The wind SSE. Fresh breezes with pretty clear weather. We should have left the Island but waited for the Discovery who has attempted to recover her anchor yesterday and today, but in vain as it got hold of a rock and the weather has been bad. Few Indians came off as they seem to have exhausted the greatest part of their stock for trade.

TUESDAY 13th. The wind from SE to E. Moderate breezes in the forenoon and afterwards almost calm. The weather fine. The Discovery after a good deal of trouble recover'd her anchor. Few of the natives came off but at night we could hear them engagd in singing and dancing on shore as if a great number had been collected together.

WEDNESDAY 14th. The wind SSE and S. Gentle breezes with very fine weather. Between seven and eight in the morning we weigh'd and left Anamocka or as the natives pronounce it Anna'mooka. This island (as well as Amsterdam & several of the adjacent ones) was discover'd by Abel Tasman in 1643, who considering the time he staid has given a tolerable account of it. Its situation is in 20.14 S Latitude, 185.30 E Longitude, and is about four leagues or more in circuit being nearly of a figure. It is somewhat higher than the other small isles that surround it but may nevertheless be rank'd amongst the low islands.[a] The shore at that part where we lay

[a] As the different heights of land may easily be misunderstood from the deficiency of terms we use in expressing their various degrees I shall endeavour to explain what I mean by low & other lands. By low land I mean that which is about the height of the English coast about Essex, or what is a general criterion, that on which the trees where there are any appear above water as you approach it before the body of the land is so apparent as to determine its extent. When I say land is of a moderate height I mean that it is as high as the English coast about the Downs of Kent & Sussex, or indeed of the whole southern coast as far as Plymouth. I know no part of the English coast to the E or S°ward to which I

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is of a steep rugged coral rock nine or ten feet high, except the two sandy beaches already mentioned, which have a reef of rock extended from across their entrance to the shore and defends them from the sea. They make excellent harbours for boats but it is difficult to get in at low water, though at that time it is easy landing on the rocky shore without if the weather is moderate. On the SE side which the Master examin'd is a fine sandy beach with good anchoring & landing, but it is expos'd to the ESE wind which blows almost constantly and sometimes pretty fresh, from whence it can scarcely be preferable to our anchoring place, the best part of which seems just to the W'ward of the largest sandy beach, as appear'd from the Discovery lying foul by being a little the other way. In the centre of the isle is a large Salt lake about a mile & a half across, round which the land rises like a bank with a gradual ascent; but we could not see any communication it has with the sea, though from the low land that runs across to it from the largest sandy Beach and the sandy soil it would appear it may have once communicated that way. There is another lake or pond, but much smaller, a little way from the shore on the left hand of the sandy beach from which we took our water, and though brackish may if taken up after rain (a great deal of which luckily happened just before our arrival) answer the purposes of a ship sufficiently. The soil on the rising parts of the island & especially towards the sea is of a reddish clayey disposition or a black loose mould, but there is no other water than the pool already mentioned, except in some small holes dug by the natives near the last which afford much better water than the pool itself.

It is very well cultivated except in a few places, and there are some others which appear to lye waste but are only left to recover the strength exhausted by constant culture, for we have seen them frequently breaking in these spots to plant again. The plantations consist chiefly of Yams and plantanes, many of which are very extensive and often inclos'd with neat fences of reed dispos'd obliquely across each other about six feet high. Within these are frequently seen other fences of less compass which surround the houses of the principal people, but for the most part these are found

can compare high land, and shall therefore say that it is the next in degree whether with respect to the whole body of land being high or its being interspers'd with high hills. Very high or mountainous land cannot be easily comprehended in a single definition, but may be understood by its always exceeding the other & adding some particular description of its height.

It should be observd that the criterion of low land mention'd above can hardly be applied to Annamooka and some of the isles about it, but I have considerd them as low merely to avoid confusion, as they cannot be admitted to the rank of those of a moderate height which we have yet seen, as Wateeoo & Mang'ya.

A [of Nomuka--Analyst]

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whole might supply the imagination with an idea of some fairy land realiz'd. It would appear that some of these places may be form'd after the manner we have suppos'd of Palmerstons Island, as there is one which as yet is entirely sand and another that has only one bush or tree. Indeed the appearance of Annamooka in general argues also such a mode of formation, did not its height perswade us that the sea has either made a very sudden recess or that it has begun to do so at a period so remote as scarcely to coincide with the date of the Creation.

At five in the evening we had reach'd Kotoo the most N°westerly of the low islands, a little beyond which is a shoal or reef on which the sea breaks all around. On passing it we were about two leagues from Toofôá, the smoke of which we had seen several times in the day though it had now almost ceas'd. This island is about ten leagues NNW from Anna'mooka and though according to the natives but thinly inhabited has good water. They call the Volcano upon it Kolloo'feea[1] and say it is an O'tooa or divinity, about which they seem to have some superstitious notions. They say it sometimes throws up very large stones and compare the Crater to the size of a small islet, which has never ceas'd smoaking in their memory nor have they any tradition that it ever did. We now hauld our wind and stood ESE towards the islands already mention'd which form here almost a semicircle. At six were about two miles from the shore of one of the largest calld Ma'toogoo,[2] when we sounded and had ground with 55 fathom a fine black sandy bottom, and soon after nearly the same water with a coarser white sand. We then tack'd and stood back having for half an hour between 50 and 60 fathom, when we brought to with the main-topsail to the mast for some time & afterwards stood on to the westward. A great many Egg birds and flying fish were seen in the passage to day, and it was observ'd that after sailing in the morning a tide or current from the westward set us much over towards the islands on the right.

THURSDAY 15th. *Therm.* 72½:73:74½:77:75:74½. Light airs of wind from the S°ward and frequently quite calm with very fine weather. The sea perfectly smooth. Between twelve and one in the morning we tack'd and stood eastward keeping close haul'd to pass to the Southward of Fotoohâá which is the Island next Kâô. At day light were not far from the last place, which is a vast rock of a conic figure with marks on its sides as if made by torrents rushing down. After passing

[1] The name of the volcano is Lofia. *Ko* is the nominative article. Lofia seems also to have been the name of the *'atua* or god who dwelt within the crater, throwing up fire and smoke and stones.

[2] Matuku.

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Fotoo'hàà[1] we steered NE and sometimes more northerly but made little progress, so that it was about five in the evening till we reach'd two shoals[a] that lye to the eastward of Nee'neeva,[2] the next island to Fotoo'hàà and scarcely more than two leagues from it. We then tack'd and stood again to the westward when we had soundings with fifty three and forty seven fathom in a coral sandy bottom, though not long before we had no ground with seventy fathom about four leagues east from Kàò.

We saw several more Islands to the eastward today and some land whose extent could not be well determin'd, which we suppos'd to be the Island we were directed to by Feenou. Several Canoes came from the different islands near us to barter their fruit, and Fee'nou who had been at one of them all night came accompanied by two more large Canoes and brought two hogs, some plantanes and Cocoa nuts as a present to the Captain but return'd in the evening. In the night we could plainly see flames issuing from Toofòà though to no great height, and in the day though it smoak'd considerably at other times it almost ceas'd.

FRIDAY 16th. *Lat.* DR 19.42 s. *Therm.* 73¾:75:78¼:78:75:74. The wind varying between SSE and SE. Gentle breezes with fine serene weather and temperate. The sea quite smooth. In the night we made short boards just to keep our station but at day light stood E close hauld, when we saw the land discoverd from the mast head yesterday afternoon, bearing EbS, and could judge it to be low from the trees only appearing above the water. About nine we could see it plainly, forming three Islands nearly of an equal size, and soon after a fourth to the southward of these as large as the others. Each seem'd to be about six or seven miles long, and of the same height and appearance, lying in a bending direction from North to south. The northermost of these is call'd Há'ano,[3] the next Fòà,[4] the third Lai'fooga[5] and the southermost Hoo'laiva,[6] but are all included in the general name Ha'paee by the natives. There is likewise a small isle to the E[t]ward of Hoo'laiva call'd Ta'taffa,[7] one lying to the westward of Ha'ano call'd Loo'hoggo,[8] and another between Ha'ano and Fòà but farther on to the eastward call'd Noogoo'nammo.[9] About ten o clock we pass'd to the southward of two other islands, the first calld Mang'onne[10]

[a] in passing between these shoals and Fotoo'hàà we sounded but had no ground with seventy fathom.

[1] Fotuha'a.
[2] Nea.
[3] Ha'ano.
[4] Foa.
[5] Lifuka.
[6] Uoleva.
[7] Tatafa.
[8] Luahoko.
[9] Nukunamu.
[10] Mo'unga'one.

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131 the second Offo'lange,[1] between which is a rock nam'd Bouhee,[2] and
103 at eleven had got up to Loo'hoggo. We then tack'd and stood to the
S°ward but in the afternoon to the eastward, and at seven in the evening were within a league of the shore of Ha'ano, but stood off again as we had no soundings with less than 56 fathom. Before dark some more land was supposd to be seen to the NE'ward, which was probably an Island mention'd to us by the natives who call it Va'vaoo[3] and say it is much larger than Ha'paee.

634 A good many Canoes came from the different isles who brought a
609 few hogs, fowls and fruit, and Fee'nou follow'd us again to day with a
431 present of two more hogs, some Cocoa nuts &c but in the afternoon went forward to Hapaee.

132 SATURDAY 17th. The wind ESE. Moderate breezes with fine weather
114 though sometimes a little cloudy. A smooth sea. Lat[d] at noon 19.46.08
133 p. ob. In the night we stood off and on and in the morning were close in with Foa, which we saw was join'd to Ha'ano by a reef running even with the surface of the sea from one to the other. In the mean time the Master was sent in the cutter to sound between several small shoals that lye a little way off shore, and before eight she made the signal for having found anchorage, upon which we stood on and soon after came to abreast of the reef which joins Lai'fooga to Fóá (in the same manner as the last place is joind to Ha'ano) though rather over towards the N end of Lai'fooga in twenty four fathom about a mile from the shore. The bottom was a fine sand and when moor'd one extreme of Hapaee bore the other the S end of Fóá the north end of Lai'fooga and the island
609 Loo'hoggo off Ha'ano.[4] Immediately after anchoring many Canoes
434 came off and in a short time there was above a hundred about the two ships with those that were constantly going to and coming from the shore. They brought off fruits and several hogs which they barterd in the same manner as the people at Annamooka, and indeed we found that many of them had been at that place while we lay there.

114 The Captain went on shore at the N part of Lai'fooga a little to the right of where the ship lay and found the landing place very convenient except at low water, when the Boats cannot get close in for a
634 flat that runs some way off and is dry at that time. We found that the people here paid rather still more respect to Feenou than at Annamooka, and no person seem'd to have equal authority to him as they seem'd to do what ever he directed with the greatest readiness.

[1] Ofolanga, the northernmost of the Ha'apai group.
[2] Puhi: it is inside the Ofolanga reef. [3] Vava'u.
[4] Cook is more precise about the position, p. 105 above.

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SUNDAY 18th. The wind E . Moderate breezes with good weather. The Gunner was employ'd to trade on shore and purchas'd a good many hogs, plantanes &c but the greatest supply we had was a present which Fee'nou made the Captain of a vast quantity of Yams, Plantanes, Sugar cane &c and two hogs, which was shar'd between the two ships. Amongst other things we purchas'd yesterday a fine green Turtle of above 300 Lib., & to day the decks were so crowded with the natives who came to barter or were incited by curiosity that it was almost impossible to stir.

MONDAY 19th. The wind Easterly. Gentle breezes with fine weather. We continued to barter with the natives on shore as yesterday and a great number were on board.

As we wanted to obtain some knowledge of the country some of us mention'd it to Fee'nou, who sent a person as a guide and to protect us from any insult from the natives. We travers'd nearly the whole island of Lai'fooga and found it in several respects superior to Annamooka. The plantations were both more numerous and extensive and we found large spots well planted with the Morus papyrifera (paper Mulberry),[1] but in many places towards the sea, especially on the east side, the country is still waste owing perhaps to the sandy soil, as it is much lower than Annamooka or its surrounding isles. Towards the middle of the island the soil is better and much better inhabited than the other parts, for we met here with very large plantations, fenc'd in in such a manner that the fences running parallel to each other form'd fine spacious roads that would appear an ornament in the most civilizd countrys. It however labours under the inconvenience of having no good water that we could see, for though we found several ponds the water was either very brackish or stinking, and in some large holes in the coral rock which is seldom above two or three feet from the surface it was no better than common sea water. At one place we saw an artificial mount rais'd to a considerable height with an arbour of low trees neatly contriv'd, under which our guide made us understand people sate to catch pigeons.[2] At another place was a house four or five times as large as the common sort with a large area of grass before it which seem'd a place for the people to resort publickly to;[3] and near the landing place we saw one of their burying grounds, which was a mount two or three feet high coverd with gravel and had four or five small huts on it, in which they said the bodys of some of their principle people were interr'd.[4] Most of the

[1] *Broussonetia papyrifera*, Tongan Hiapo.
[2] Tongan *mala'e*.
[3] One of the mounds called *sialupe*.
[4] A *fa'itoka*.

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Most of the people had left their habitations to go where the ships lay, and our guide, to show perhaps that he deriv'd his authority from a person superior to any of them, often went into their huts, examind what was in them & made no scruple to take what he wanted or throw the things down without. He also often stopt people that were carrying things to barter & took dress'd yams or cocoa nuts to eat, nay at one time took some fish from a poor old woman who was going to dress them and was probably her subsistence for the day, but after carrying them a little way he gave them to a person that was following us.

The island is not above seven miles long and in some places not more than two or three broad. The east side, which is expos'd to the trade wind, has a reef running to a considerable breadth from it on which the sea breaks with great violence. It is a continuation of this reef that joins it to Foa, which is not above half a mile from it, and is partly dry at low water so that the natives can walk from one island to the other. The shore itself is either a coral rock six or seven feet high or a sandy beach, but higher than the west side, which in general is not more than three or four feet above the level of the sea. This side forms a bending or sort of bay with a fine sandy beach its whole length, defended by several shoals without, but as the entrance in is difficult from shoals perhaps the spot where the ships lay is more convenient. We found very few people in this excursion as most of them were at the Ships.

TUESDAY 20th. The wind Easterly. Gentle breezes with fine weather. In the forenoon the Captain to gratify the curiosity of the inhabitants orderd a party of marines on shore with some from the Discovery to show them the method of using our fire arms. They seem'd well pleas'd with the firing and various motions which were made, though our soldiers were by no means examples of the best discipline. In their turn they exhibited a dance and excersizd their clubs, in which it was acknowledg'd by all they far outdid our people in exactness and dexterity.

In the evening we entertaind them with fire works, which luckily happen'd to be in excellent order, at which they express'd much satisfaction and a good deal of astonishment; especially at some water rockets which were admirable and gave us who had never seen any as much pleasure as the Indians could possibly receive. They compar'd the sparkles which fell from the sky rockets to falling stars, and were surpriz'd at the height of the smoke that remaind after they were spent for they suppos'd it absolutely remaind and became a cloud.

When we had finish'd they treated us in their turn with several

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These two last dances met with universal approbation from the spirit and exactness with which they were perform'd. The spectators who were no doubt perfect judges of the propriety of the several parts could not withhold their applauses at some particular ones, which indeed might be observ'd by a stranger who never saw the diversion before: for though through the whole the most strict concert was observ'd it might be said that some of the motions absolutely spoke the Language that accompanied them, if we allow there is any connection between motion and sounds. At the same time it should be observ'd that though the musick in the chorus and that of the dancers correspond, yet constant practice seems to have a great share in effecting the exact time they keep; for if any of them are accidentally interrupted they never find the smallest difficulty in entering upon any part of the dance or song, and their perfect discipline is no where better shown than in the sudden transitions they make from the ruder motions and harsh music to the soft airs and gentle motions.

The place where the dances were perform'd was in an open space amongst the trees just by the sea, with lights at small intervals in the inside of the circle. The concourse of people was pretty large though not equal to what assembled in the forenoon when the marines excercisd, at which time some of our Gentlemen guess'd there might be about five thousand, others a great many more and some fewer.

WEDNESDAY 21st. The wind w in the morning in fresh breezes with cloudy weather and some rain, but afterwards clear with gentle breezes from the Soward but at night brisker. This change of weather seem'd to be indicated by the great heat for two days past and the Lightning to the westward last night. Few of the natives on board and little trade for provisions carried on.

THURSDAY 22d. The wind Southerly. Gentle breezes with fine weather. A good many Indians on board but little trade for provisions. We confind two Indians for stealing one of whom had a large wound on his cheek made with a boat hook by one of our people who was sent in pursuit of them.

FRIDAY 23d. The wind ssw in the morning and afterwards se. Moderate breezes with fine weather. A good many Indians on board who brought some fruit and hogs, of the last of which we have such a number that we are oblig'd to salt them, and Feenou set out for Va'vaoo this morning to bring another supply, perhaps to prevent our going to Amsterdam which he is still averse to. The two Indians were reliev'd on bringing a hog as a ransom, but their boat was

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detain'd untill they should bring another which they had promis'd yesterday.

SATURDAY 24th. The wind E. Moderate breezes with fine weather but at night calm with rain. Our boats were employ'd in watering to day which they took from a pond of a bad sort near the point to the right of the anchoring place. A spit runs out from it round which the boats must go or else the casks must be rolld over a reef on the nearest side.

A report was spread about by some of the Indians that a Europæan ship had arriv'd at Anna'mooka since we left it, which gain'd ground so fast that the Captain went on shore in the afternoon in quest of the man who it was said had brought the report: but he could get no certain intelligence and one man who it was said left it only this morning flatly denied it, though it seems the other was so particular as to describe the size of the ship & said there had been a boat on shore from her at the watering place.

SUNDAY 25th. The wind S or SBW. Moderate breezes with fine weather. Few Indians have come off these two days and their spare provisions seem almost exhausted, as they bring few things to sell except their houshold furniture such as Matts, cloth, baskets &ca.

MONDAY 26th. The wind ESE and EBS. Gentle breezes with very fine weather. In the morning we unmoord and at eleven in the forenoon weigh'd and saild along the West side of Laifooga nearly SBW (an[d] SSW?) about two miles off, passing between some shoals without us and some others that lay nearer the shore where there are good soundings from twelve to fifteen fathom. Between twelve and one we bore away a little for a shoal near the S end of Laifooga, but afterwards hauld up for the opening between that and Hoo'laiva which are join'd together by a reef as the others. At one we tack'd as there was some appearance of shoal water a-head, and standing in again came to an anchor between two and three off the S part of Laifooga in 18 fathom a coral sand bottom, the point bearing SEBE a mile and a half distant. The Discovery was a considerable time of weighing after us and found much more difficulty in getting up, as it was near dark before she anchor'd and had touch'd on a small Coral rock in her passage.

TUESDAY 27. The wind SE and ESE. Fresh breezes with cloudy weather and sometimes a little rain. The master was sent with two boats to sound for a passage to the S°ward between Hoo'laiva and Longa'hoo,[1]

[1] Luangahu.

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things they had got in trading with us, which he examin'd and enquir'd what they had given for them but returnd all except one necklace.

This mans arrival sufficiently explain'd the conduct of Feenou and points out his Character, for it seems to have been his aim all along to detain us amongst the islands where his authority was superior to that of every other person, and prevent our going to Amsterdam where he knew his true consequence must appear. His objections to our going there when at Annamooka, his directing us to Hapaee and the diligence he us'd there to procure us a sufficient supply are strong proofs of this; but finding us still bent on going there he not only set out for Va'vaoo to try if the things he could procure there would alter our purpose, but in all probability he had occasiond the report of the Europæan ship being at Annamooka to be spread—perhaps with an intention of at least delaying our passage to Amsterdam by visiting that place, if not with the hopes that we might by lengthening our time meet with such bad weather as would oblige us to leave the islands entirely.

It would be hard to arraign a man before his purposes are fully known, as people are sometimes oblig'd to act faultily in appearance while their intentions are good. If Feenous motives for preventing our going to Amsterdam were entirely interested, that is if he meant to appropriate every thing he could procure from us to himself, no man would hesitate a moment in condemning him. But if he consider'd that it was a matter of indifference to us where we obtaind a supply, and that he endeavour'd to obtain these things as a proof of his diligence which he might produce on his return, considering at the same time that no more could be had from us supposing we had gone there, his conduct was not only excusable but perhaps laudable, and the methods he took to effect his intentions were sufficient proofs that he was no stranger to good policy when he wanted to recommend himself.

WEDNESDAY 28th. The wind ESE and SEBE. Moderate breezes with close cloudy weather and in the afternoon a constant heavy rain.

There has been few Indians off since we anchor'd here, but we had another visit from Poulaho to day who confirm'd what he said yesterday of Feenou, ie that he was a person sent often to decide differences in the smaller isles and made us sensible of his power by saying that he could kill him if he did not act uprightly. He also mention'd a woman call'd Chee'nei,ta'kulla[1] that resides at Va'vaoo and is a

[1] Sinaitakala. Cf. Cook, p. 178 above.

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643 relation of his, who is superior in rank to himself but has little power.
[644] He is about forty and seems a sensible man from the many shrewd
[648] questions he ask'd, amongst which was the reason of our coming
[644] amongst the isles &c. He already left off exacting that sort of homage
[576] as feeding him and turning their backs to him while he ate, which
[177] was done perhaps only to show us his consequence, but neither of the two that was with him would eat or drink in his presence though one of them is his brother nam'd Futta'faihe. He seem'd to be the most unprejudic'd person imaginable, eating any thing dress'd in our way and drinking wine with as much indifference as if us'd to it daily.

132 THURSDAY 29. Gentle breezes of wind from the Eastward in the morning with cloudy weather but in the afternoon the wind ssw and s. Mod[t] breezes with cloudy weather. Some swell from the eastward.

114 Between seven and eight in the morning we weigh'd and steerd WNW, as we were not sure that the passage found by the boats continued to Anna'mooka where we intended to touch. At first we made little progress and pass'd at a distance from Longa'hoo and Kakka'watta,[1] two islands next to Hoo'laiva (to the westward of which last place and off its s part are some shoals), leaving them on the left and afterwards pass'd between Lo'fango and Mong'onne as we had done on coming to Ha'paee. We had also on the left two small Islands call'd Ongoo,goo'boole[2] & Mai'amma,[3] off which lyes several shoals, but when the wind shifted we haul'd close up and at night were abreast of Nee'neeva standing on towards Fotoo'hââ.

648 Poulaho follow'd us and came on board but in the afternoon went
643 on shore to Lo'fango. Three more large Canoes follow'd us in one of
[431] which came Too'bou, a person of some consequence at Amsterdam,
[644] who made a present of a hog with some other things and staid on board, as well as Futtafaihe and six or seven of Poulahos attendants.

132 FRIDAY 30th. The wind SSE. Fresh breezes with cloudy weather and some small rain in the morning. Before day light we made short boards
114 and with great difficulty kept clear of some reefs near Nee'neeva, which could not be seen till quite near them as it was very dark, so that at one time we were oblig'd to fire two swivels to let the Dis-
[133] covery know the danger. At seven in the morning were very near Fotoo'hââ (between which & Nee'neeva we had been working in the night) which is quite steep at this place and rather higher than the other isles near it, being to appearance twenty feet or more perpendicular with no soundings off it in less than fathom and seems
[133] but indifferently cultivated. The rest of the day we kept turning to
[132]

[1] Hakau'ata. [2] Nukupule. [3] Meama.

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windward and in the evening were close in with 'Kotoo[1] (the next isle to Toofôâ), which with the shoal that lyes to the NW of it and the other islands mention'd the day we left Anna'mooka form a good defence from the S°ly wind which now blew, but though we intended to anchor found no ground with less than fifty fathom close in, so that we brought to with the maintopsail to the mast at six o clock, and also the Discovery, but afterwards stood off and on having scarcely made three leagues to windward all day. In the middle watch this morning one of our people fell from the jib-boom into the sea but luckily caught hold of a rope as the ship had not much way.

Two or three Canoes came off from the islands with some Yams and bread fruit, though it blew fresh, and the nine whom we have on board seem not to have the least apprehension of danger from being drove off by a strong wind or any other accident.

SATURDAY 31. *Lat.* Obs. 19:49:34 S. The wind SE and ESE. Fresh breezes which increas'd to a brisk gale towards night with dark cloudy weather. A moderate sea. Before day light we stood between Kotoo and the isles east from it making several tacks so that we kept nearly in our station. At day light we stood pretty close in with it, thinking there might be a passage between it and the reef which is calld Ko'koppo[2] to the S°ward, but being doubtfull about it we bore away round the NW point of the reef (which extends a good way to the SE) and then haul'd our wind. We made several boards in the day but gaind very little, as we only just made the point of the reef again in the evening, & the sea being smoother here we stood in again to our last nights station and made short boards.

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SUNDAY JUNE 1st. The wind ESE and E. Fresh breezes and some brisk squalls in the forenoon but afterwards rather more moderate. The weather dark and cloudy with a good deal of rain in the forenoon and afterwards some flying showers. Before day light we stood between Kotoo and Fotoo'hâá but our coming into this place for smooth water had like to have cost us dear, as we almost run on a shole that lyes to the eastward of a small sandy island with a single bush call'd Pootoo Poo'tooa[3] near Ha'faiva about three in the morning. As it was very dark and blowing fresh we were close upon it before it was perceiv'd so that the only method left to save the ship was to throw all a-back, which being done very quickly she wore round though then to appearance scarcely two or three times her length from the broken

[1] Kotu. [2] Hakau Kopau. [3] Putuputua.

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water, and we had an oppurtunity time enough to warn our consort of the danger by firing three swivels.

In the fore noon we attempted to work up towards Hafaiva (which is the largest isle hereabouts) between Pootoo poo'tooa & a shoal that lyes NE from Kotoo, but making little progress and the same weather being likely to continue, we came to an anchor at noon in fifty fathom a coarse sandy bottom about a mile WBN from Pootoo poo'tooa, Fotoohâá bearing nearly NNE, Kotoo SWBS, and the shoal to the NE of it SSE and SE. The Discovery also came to soon after a little to the NE of us. Several Canoes came off from Ha'faiva with Cocoa nuts & Plantanes and in the morning we sent the pinnace on shore to Kotoo with our Indian guests, who were so heartily tir'd of their short Voy[age] that they had once prepar'd themselves to swim to it. Their greatest distress was with respect to their food, for they were not fond of Pork dress'd after our manner and liv'd chiefly on Yams. In the evening we caught a large Snapper of twelve or fourteen Lib. and a Grooper of the same size.

MONDAY 2d. The wind SE. Fresh breezes with cloudy weather in the forenoon, but afterwards clearer. In the forenoon the Captain went on shore to Kotoo, which is scarcely accessible to boats from the coral reefs that surround it. It is not more than a mile and a half or two mile long and not so broad. The NW end is low like the islands of Hapaee, but it rises suddenly in the middle and terminates in reddish clayey cliffs at the SE end about thirty feet high. The soil thereabouts is of the same sort as in the cliffs but in the other parts it is a loose black mould. It produces the same things as the other islands and is tolerably cultivated but is thinly inhabited. We saw Annamooka from the highest part of it and the Captn thought he perceivd a clear passage about Toong'ooa and the other isles towards that place. Our people were employ'd in cutting some grass for the cattle and we planted some Melon seeds with which the natives seem'd much pleas'd and inclos'd them with branches. On our return to the boat we met with two or three ponds of water but it was very salt, and near them was one of their burying places that was much neater than those which were seen at Hapaee.

Several Canoes came from the different islands to barter their cocoa nuts, plantanes &c and we observ'd that almost all of them as well as the inhabitants of Kotoo were affected with a violent cough and slight sore throat, which also made its appearance on board for two days past, perhaps from the sudden change to and continuance of the bad weather.

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The master was sent in the cutter to see if there was a passage between the large reef Ko'koppo and 'Kotoo but though he found it clear it was so narrow as not to be worth hazarding the working through it for all that could be gain'd.

TUESDAY 3d. The wind SE. Fresh breezes with fine weather. The master was sent with the cutter to try and find a good passage between Poo'too pootooa and the reef to the SE of us into Ha'faiva but found it would be better to go in to the eastward of Pootoo poo'tooa, though even there it is narrow. He found good anchoring at Ha'faiva but says to the So'ward of that about Matoogoo & the other isles there are a great number of small detach'd shoals which would make it almost impossible to get to the So'ward that way, though the Captain thought he saw it clear yesterday from 'Kotoo. He sail'd round Hafaiva, landed and found it a pleasant island but the water which stood in a pond was little better than that at the other isles. We had a visit from Poulaho in the forenoon who has follow'd us closely from Hapaee and slept at one or other of the islands every night. He brought a present of bread fruit which seems all these small islands can now afford, & to be nearer us he has mov'd from Ha'faiva to Kotoo with two large Canoes since yesterday. He approv'd much of our going to Amsterdam from the time it was first mention'd, and presses Omaee who has been ashore with him these two nights to stay at Amsterdam.

WEDNESDAY 4th. The wind ESE or EbS. Fresh breezes and sometimes brisk squalls during which it generally veer'd to EbN. The weather cloudy and sometimes showers of rain. A considerable sea. In the morning between seven and eight we weigh'd and stood up round the NW part of the reef off Kotoo and then hauld close to the So'ward. We soon came in sight of Anna'mooka and at noon were abreast of it, passing to the Eastward of a large shoal that lyes three leagues west from it. At one afternoon we tackd and then made several boards but could not fetch the island, the N part of which bore ENE five or six miles distant in the dusk of the evening and the S part of Anna-mooka'eeke SEbE.

The Discovery could not weather the shoal which oblig'd her to make a stretch to the No'ward, by which she fell so far to leeward that we could scarcely see her in the evening. Saw several Terns, Shearwaters, and a good many flying fish in the passage.

THURSDAY 5th. The wind ESE. Strong breezes or brisk gales with dark cloudy weather. A considerable sea. Before day light we kept turning making boards of about two hours and at dawn the N part of

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114 Annamooka bore the island on this side making in two or three low hummocks. Between eight and nine we anchord in the same spot we left on going to Hapaee but the Discovery was still three or four leagues to leeward and did not get up till three in the afternoon.

489 The Captain went on shore before and after dinner and the natives to about the number of two hundred assembled on the beach & traded with as much eagerness, if not more so, than if we had not [241] been there before. Their stock appear'd to have been recruited much in our short absence but instead of bread fruit, which was the only article we could purchase on our first arrival, nothing was to be seen now but yams & a few plantanes, which shows the quick succession of the seasons or at least the different Vegetables produc'd at the 164 several times of the year. We found the cold mention'd at Kotoo quite universal here & seems a disorder they are not much acquainted 634 with. These people in the absence of Toobou whom we left at Kotoo seem to be under little subordination, for we could not perceive to 166 day that one man assum'd more authority than another. It appears also that a great many of the principle men and women whom we saw here at first had come from the other isles, as few or none were seen now.

132 FRIDAY 6th. The wind E and ENE. Fresh breezes with cloudy weather in the forenoon but afterwards clearer and more moderate. Very few 439 Indians came off to the ship but they traded on shore as usual, which brought us a seasonable supply as our Vegetables were almost 634 exhausted (though we had plenty of hogs) on coming in here. In the 648 afternoon a large Canoe came with Feenou, who reported that several Canoes which he was bringing with hogs and other things from Va'vaoo were lost in the late strong winds. We were now too well acquainted with his character to give much credit to such a story but easily overlook'd it from the service he had been of to us before. [643] The truth probably was that he found himself unable to procure the things at Va'vaoo which he expected, or if he did get any and heard at Hapaee which lay in his way back that Poulaho had been with us he might leave them there, as he doubtless knew the merit of procuring them would have fallen to the share of his superior though he had been at the trouble. He was however in that case obligd to frame a story, that it should not appear he had broke his promise to Captn [643] Cook and to procure him a civil reception at his return. He seem'd to be sensible of the error he had committed in assuming the character of the first person in the country, as he not only acknowledg'd

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Poulaho to be King of Amsterdam & the other isles but seem'd to insist very much upon it, perhaps from a fear of offending the other when he should hear of his former presumption.

The inhabitants have been very busy in cultivating while we were absent for they have made several large Plantane fields in places that were waste at first. We observ'd here as well as at Kotoo a good many of the small hillocks where the Yams are planted strew'd with a little white sand, which they say are those intended for the use of the chief. The Melons which the Capt[n] sow'd here have come up but are mostly eat by small insects & some of the Pine apples left with Toobou seem to be in a thriving state.

SATURDAY 7th. The wind ENE. Fresh breezes with fine clear weather. In the forenoon Poulaho came from Kotoo and we could at once see his superiority to Feenou on meeting him, for the last plac'd himself down in the circle that sat before Poulaho as an indifferent person. He seem'd at first rather abash'd as some of us were present who had been us'd to see him as a different person, but he soon recover'd himself & both he and Poulaho went on board with the Captain. He behav'd there much as any of the others that attended Poulaho, saluting his foot with his head and hands and could not ther[e] eat nor drink before him.

A few Canoes came off to the ship but we had less trade on shore than yesterday as most of the people went away when Poulaho landed.

Some of the Indians stole three glasses belonging to the Astronomical Quadrant while M[r] King was observing on the beach, but they were soon recoverd by applying to Feenou who had been very usefull to us before when things were stole both here and at Ha'paee.

SUNDAY 8th. The wind ENE and NE. Moderate breezes but at night rather gentle. The weather fine. A moderate sea. Between eight and nine in the morning we weigh'd and left Annamooka steering sbw for the island Amsterdam. The islands to the SE of Annamooka which we had on our left are first Mango'eeke, Mango, Tonoo'maia, Ko'noogoo and Falla'fa'jeea.[1] There is also a very small one off Kon'oogoo call'd Gefoo'ganna[2] from which runs a large shoal nam'd Ko'foonga'lillo.[3] In the evening between five and six we saw two islets or rocks bearing w about four leagues, the N°ermost call'd Hoonga ha'paee and the other Hoonga'tonga.[4] The first has only five

[1] Kelefesia.
[2] I cannot identify this shoal.
[3] Kefikana, a conspicuous white rock.
[4] Hunga Ha'apai and Hunga Tonga.

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162 men living upon it according to two Indians we carry'd with us, and the other is uninhabited but both abound in sea fowl.

648 Poulaho and Feenou set out with us in different Canoes attended
634 by several others but they soon outsaild us and in the evening steerd
643 more westerly than we.

MONDAY 9th. *Lat.* Obs. 21.04 S. The wind NE and NNE. Gentle breezes
132 and in the forenoon almost calm. The weather very fine but hot.

In the morning at day light we saw Amsterdam or as the natives
114 call it Tonga'taboo though much oftener simply Tonga, and some
103 small isles that lye off it, but we had made little progress in the night as Hoonga Ha'paee and Hoonga'Tonga were still seen astern. The isles on the left or to the E^t^ward as we steerd sbw, reckoning from the N^o^ermost were 'Taoo, A'tâá, Eoo'eeegee, Motoo'taboo, ennevy, Noogoo or Fook'avee, E'ooa[1] or Middleburg appearing over the E part of Tonga and Malee'nóá[2] a very small one but a little to the left. There was also a shoal call'd Tanga ma'noonee to the W^t^ward of Eoo'eeegee and another call'd Tooa'onne[3] lying E of Malee'nóá.

On the right or to the westward was a shole call'd Ha'kou ma'máó,[4] lying without the first islet nam'd Atta'tâá[5] which appear'd now within the west end of Tonga. The second is Too'fagga[6] which was a very little to the right, and within Atta'tóá are two small ones, the larger or inner call'd Ho'lóá[7] and the other which is close to it Laggebai'ou.[8] A-head there were several Islets as Vaille tóá'neeoo, Vaille toa'hagge[9] and Mon'ooafai,[10] all small besides Fa'fâá,[11] a little larger, and within that Makka'haa.[12]

114 The pinnace was hoisted out and sent to sound as we had only 25 fathom, the extremes of Tonga at eight o clock bearing &
133 . At ten we were passing over a flat of Coral rock and small patches of sand which could easily be seen with eight and ten fathom, and not long after had sometimes but six or seven. We had pass'd Maleenóá about a mile when we found the Ship touch on the rock, but without much violence as the breeze was gentle and the water

[1] The foregoing are Tau, Ata, 'Eua Iki, Motu Tapu, 'Onevai, Nuku, Fukave (these last two different islands), 'Eua.

[2] Malinoa.

[3] These two names may exist still in local knowledge, but do not come on to the charts or into Gifford's *Tongan Place Names* (Honolulu, 1923).

[4] Hakaumamao. The name means 'distant reef'. [5] Atata.

[6] Tufaka. [7] Polo'a. [8] Alakipeau.

[9] These two islets are now referred to as one, Velitoa; they are separated by only a few yards of water, wadeable at low tide. The two names given by Anderson may refer to their appearance: Velitoa-nifo—'Velitoa with the teeth', and Velitoa-hake—'Velitoa that rises up'. Anderson's versions of the names are borne out by the engraved chart, pl. XIX in *Voyage*, I; but Gifford, *Tongan Place Names*, p. 257, gives them as Velitoahihifo, (Western Velitoa) and Velitoahahake (Eastern Velitoa).

[10] Monu afe. [11] Fafa. [12] Makaha'a.

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perfectly smooth, immediately after which the water deepened and shoal'd several times but again deepened with a sandy bottom, and at eleven we anchor'd in 7 fathom, the western extreme of Tonga bearing the east end , Fa'fåå SEbS a mile and a half and Malee'nóå NE above two miles distant. We found the Discovery on following us also struck and stuck fast for a little time, but could receive no hurt as the weather was so moderate. The other boats were hoisted out & a little after noon three of them with two from the Discovery were sent to sound in shore. Between four & five they made the signal for having found anchorage, when we weighd and stood in SSW but anchor'd again before six in 3½ fathom, one extreme of Tonga bearing the other off shore about two miles.

In the afternoon we had a visit from Poulaho and Feenou, and a few small Canoes came off & barter'd fruit & fowls, but they had been so well instructed by those from the other isles that they ask'd a very extravagant price for every article.

TUESDAY 10th. The wind S and SSW. Gentle breezes with dull cloudy weather and some rain early in the morning. Soon after daylight we weigh'd and work'd in between the island Ko'lóå and a shoal lying to the westward of Makka'håå call'd Gooa'langa, where we had from to fathom within which is a smaller shoal that our boats had overlook'd last night. Both these sholes are dry at low water. We work'd on and about one in the afternoon anchor'd very near Pakáé, or Pang'ia-motoo,[1] a small island within Makkahåå, between it and the shore of Tonga in fathom fine sandy bottom. Within it are three isles nam'd Maneema, Onne'atta and Hóólaiva[2] all joind by a reef, the last of which is only seperated from the main by a narrow creek. These form'd a perfect defence to the eastward, and the shoals we had pass'd, which lye to the NW with Tonga to the S and westward, altogether made a harbour entirely sheltered from all winds and sea. When moord Pangiamotoo bore , a point of Tonga to the westward , and another which bounds one side of the creek of Hóó'laiva . Our Consort came to an anchor soon after between us and the main about a mile from the shore.

The Captain went on shore after dinner to the points opposite Hóó'laiva, and a very little from it found a convenient place for pitching a tent near a good house with a large open Area before it; but few people were seen though above a hundred Canoes were about

[1] Pangaimotu.

[2] The first two of these three are Manima and 'Oneata, lying on the same reef as Makaha'a and Pangaimotu. The third must have been then called Uoleva; it is now Nukunuku.

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the two Ships while working in, with whom we traded for hogs, fowls & vegetables only as the other articles had been prohibited by the Captain as at Annamooka.

WEDNESDAY 11th. The wind SE. Moderate breezes with cloudy weather. In the forenoon we pitch'd a tent just by the house mention'd yesterday, which is almost the only one here as the country near it is not at all cultivated. The horses cattle & sheep &c were afterwards sent on shore and a party of marines with their officer to protect the people. We discoverd two or three ponds near the place but they had all very bad water, though we found one on Pang'ia motoo that had rather fresher water than any we have met with amongst the islands, but rather dirty from the little care taken of it by the natives.

A good many Canoes came off & barterd Yams, Cocoa nuts and a few hogs but they were not near so numerous as yesterday, though we expected a much brisker trade here than any place we had been at from its greater extent.

THURSDAY 12th. The wind SE. Gentle breezes with very fine weather. On the evening we arriv'd here the Captain brought on board a person who had attach'd himself to him as a friend when he touch'd at this island in 1773, and another who had done the same with Captn Furneaux, who commanded the Adventure. Amongst other things they mention'd a person nam'd Maree'wagee,[1] who they said was of the first consequence in the place and as they were understood superior to Poulaho, to whom he was related, but so old that he liv'd in retirement and yet was held in great veneration. It excited his curiosity so much that he proposd yesterday to Poulaho that he should pay him a visit, which the other readily agreed to and offer'd to accompany him, at the same time saying he would send previous notice to Maree'wagee that such a visit was intended him. The Captain accordingly set out in the pinnace this morning carrying some things with him as a present, and Captn Clarke joind him in one of his own boats. We went round Makka'hàà to the eastward, and then turning to the SEward according to Poulahos directions row'd up into a spacious bay whose entrance from the east side of Hóólaiva to the opposite point seems to be about two miles, the breadth within that three and the depth near four, but it was so full of shoals that we found it difficult to get up with the boats. The east and west sides are low, with some creeks running into the last farther than we could see edgd with mangroves, but at the bottom or SE part the land rises to

[1] Macaliuaki.

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FRIDAY 13th. Calm almost the whole day with dull weather and rather warm. Some of our people employ'd in wooding, some about the tent in looking after the cattle and other things, others in cleaning out the watering place at Pang'ia motoo and the sail makers in repairing sails. A considerable number of Canoes came off with Yams, hogs &c and the Gunner was employ'd bartering for these articles on shore, to which the large space before the tent was well adapted.

In the afternoon the Captain went to visit Maree'wagee who he was inform'd had come for that purpose, perhaps from the displeasure shown yesterday at our disappointment. We found a person sitting under a large tree near the shore a little to the right of the tent, with a piece of cloth at least forty yards long spread before him, but were informd that another that sat a little way from him to the right on a piece of Mat was Maree'wagee. Omai who interpreted, though very indifferently, inform'd him of the reason of our coming to this island which he seem'd to approve but said very little, another person on his right hand repeating most of the things Omai said. The Captain then made him a present of a hanger, a piece of printed cloth, with some other triffling things, and Captain Clarke gave him a large necklace of beads which they esteem very much, both which he receiv'd with few marks either of displeasure or satisfaction. The other chief who we understand was Too'bou, a man we had heard of at all the other places as a person of very great power, was presented with a piece of Gauze and a few other things which he seem'd to regard but little, after which we entertain'd them for an hour with two french horns and a drum, but they were most pleas'd with the firing off a pistol which Captn Clarke had in his pocket. They presented Captn Cook with the large piece of cloth, and the visit ended with an invitation to both the chiefs to come on board the Ships tomorrow which they readily consented to.

Mareewagee is a slender man and from his appearance seems to be considerably above three score. There was no particular mark of respect paid him by any person present, nor had he any external appearance in dress to distinguish him by. The large crowd of people that were about us might indeed be consider'd as a proof of his consequence, if he orderd them to attend, but of that we are uncertain; and yet he is certainly a man very much esteemd as the people all say he is Mo'tooa Tonga, which is to say Father of Tonga or of his country.[1] Too'bou seems about fifty, rather corpulent and almost

[1] Anderson's interpretation is probably correct: *motua* is a word of wide significance—an 'elder', a parent, especially father.

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blind with a disorder of his Eyes. It is probable he precedes the other in rank as he certainly posses'd what we might call the seat of honour, sitting under the tree and fronting us as we walk'd up, while the other sat aside, and indeed it appeard that he was rather disappointed by our addressing Mareewagee first & paying most attention to him.

SATURDAY 14th. The wind Southerly. Gentle breezes with fine weather. The people on shore employ'd as before & those on board mostly in the hold. The natives brought a good deal of fruit and some hogs off & a brisk trade is carried on at the tent. We had a visit from Poulaho who now lives constantly at the house or Ma'lace by the tent, I believe with an intention to superintend or see that no mischief is done by his people. The Captain made him a present of some things but neither of the other chiefs came off as they had promis'd yesterday. He entertaind our people at night with a dance at the tent, and to the surprize of every body the unwieldy Poulaho endeavour'd to vye with others in that active amusement.

A Canoe went to the Buoy where our boats lay and stole an iron pin belonging to one of them, for which we confin'd one in irons who was found in the Canoe though not the principal, but the iron being return'd in the afternoon he was set at liberty.

SUNDAY 15th. The wind SE. Moderate breezes with fine weather. In the forenoon some of us walk'd to the westward of the tent and found the country totally uncultivated for near two miles, though quite coverd with trees and bushes in a natural state growing with the greatest vigour. Beyond this is a pretty large plain on which are some Cocoa trees and a few small plantations that appear to have been lately made, and seemingly on ground that has never been broke in before, but it seems to preserve the same appearance still farther on. We found that several of the principal people, as Maree'wagee, Too'bou, Fee'nou & some others had erected temporary huts to live in while they remaind here, near the path which leads through the uncultivated part immediately west of the tent. Near the creek which runs to the eastward of the tent the land is quite flat and partly overflown by the sea every tide. When that retires the surface is seen to be compos'd of coral rock with holes of a yellowish mud scatterd up and down; and towards the edges where it is a little firmer are innumerable little holes, from which issue as many small crabs of two or three different sorts which cover the place as flies on a carcase, but are so nimble that on ones approaching they disappear in an instant and baffle even the natives to catch any of them.

At this place is an artificial work which shows these people have

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some design and perseverance when they mean to accomplish any thing. It begins on one side as a narrow Causeway, which becoming gradually broader rises with a gentle ascent to the height of ten feet, where it is five paces broad and the whole length 74 paces. Joind to this is a sort of Circus or centre, whose diameter is thirty paces and not above a foot or two higher than the causeway, that joins it with some trees planted in the middle. On the opposite side to the Causeway another of the same sort descends but is not more than forty paces long, and partly fallen down. The whole is built of large Coral stones with earth on its surface, which is quite overgrown with low trees and shrubs and from its decaying in several places seems of no modern date. Whatever may have been its use formerly it seems to be of none now, and all that we could learn of it from the natives was that it belongd to Poulaho and is call'd E'tchee.[1]

The Captain brought Mareewagee and Too'bou on board to dinner and it was observ'd that these people, though of great rank, paid the usual mark of submission by bowing the head & touching the feet to a boy of twelve or fourteen[2] who is a son of Poulahos and is intended to succeed his father as king of the isles.

MONDAY 16th. The wind SE? Fresh breezes with cloudy weather till near the evening when it was more moderate and clearer. Our people employ'd as before and as we were at work in the hold examind some of the English bread which was found in very good condition. The trade for provisions not so brisk as formerly.

TUESDAY 17th. The wind Easterly. Moderate breezes with fine weather. In the morning when walking to the left of the tent we met several hundreds of the natives each carrying a pole with a small yam at both ends, and instead of these some had two or three bread fruit, which they carried to a large space that had been clear'd away before Mareewagees temporary hut, throwing them down and forming a large heap which they call'd Ha'paee[3] on each side. Several also brought a good many small fish stuck upon the points of the twigs of some wither'd branches which they carried in their hands, and laid down as an addition to the heaps. About eleven o clock they began in the same clear space to exhibit various dances which they call Mai,[4] the music consisting at first of seventy men as a Chorus, who sat down and amongst them three instruments which we call'd Drums

[1] An *esi* or 'rest mound'. [2] The boy called Fatafehi Fuanunuiava.

[3] 'api'api, crowded, full. It has nothing to do with the name of the island group. A road crowded with men, or a basket full of many things, would be called 'Api-api', says Mariner. Cf. Clerke's confusion, p. 102, n. 1 above.

[4] me'e.

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repeating sentences very softly but with little action, which is commonly one of the most applauded parts. At the same time the mere acting part independent of that is well worth our notice, both with respect to the extensive plan on which it is executed and the various motions, as well as the exact unity with which they are perform'd; though I did not observe that these were always regulated by the drums, which sometimes beat very quickly while these were slow, but the sentences they repeated or mode of their song constantly accorded with the motions. It has still one greater merit, which is that in most nations which we say are unciviliz'd these things are often instituted with an intention to raise and nourish many of the most mischievous passions, such as rage, an obstinate contempt of death, desire of revenge and others tending to the disquietude and destruction of mankind, wheras this to appearance inculcates the very reverse in every respect. Each motion is made in the gentlest manner, and without those violent efforts which argue an exertion of rage; every word that is spoke, though not understood, might from the manner of its delivery be suppos'd to convey a gentle love tale instead of inspiring rancorous sentiments or brutal ferocity; and every face instead of a sullen frown or distortions which raise terror wears an aspect so placid and benevolent that it is impossible to associate the idea of barbarity along with it.

At night we were entertain'd with the Bo'mai,[1] or night dances, on a space before Feenous temporary habitation. They lasted for about three hours, in which time we had about twelve different ones perform'd much after the same manner as those at Hapaee, but in two that were perform'd by women a number of men came and form'd a circle within theirs, and in another consisting of twenty four men there were a number of motions with the hands that we had not seen before which were highly applauded. The music was also once chang'd tonight and Feenou appeard at the head of fifty men who had danc'd at Ha'paee, in one well dress'd with linnen, a large piece of gauze and some pictures hung round his neck. But it was evident after the diversion was ended what inconvenience we had put these good people to, or rather themselves, for being drawn together on this uninhabited spot numbers of them were oblig'd to lye down and sleep under the bushes, by the side of a tree or canoe; and many either lay down in the open air, which they are not fond of, or walk'd about all the night.

WEDNESDAY 18th. The wind ESE. Moderate breezes with fine

[1] *po me'e*, 'night of dancing'.

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weather. The people employ'd in wooding, mending sails &c as usual on shore, & those on board in getting up the empty water casks &c.

In return for the entertainment we receiv'd yesterday a party of marines were order'd to go through their excercise on the spot where the dances were perform'd last night. Poulaho with the other principal people were present, and all the spectators were well pleas'd with the several motions when properly done, but they easily discern'd the aukwardness of some of their monuvres which afforded them matter for much mirth. They could not however help expressing their surprize at some platoons that were tolerably exact, and still more at the distance they saw the bullets fly to upon the water, but they seem'd to pay little attention to the fife and drum or french horns that play'd in the intervals.

In the evening we exhibited some fire works on the same spot, which was convenient from being close to the water side, and they expressd a considerable degree of wonder at some of them, especially the water rockets and two false fires, the first of which some of them were apprehensive would come on shore when they saw them change their place so frequently in the water, and very seriously ask'd the question. We found that the diversions which were shown us yesterday had been done entirely by the orders of Mareewagee and Toobou, for the two piles of Yams that lay in the ground where they had been perform'd were given to Cap^tn Cook as a present (with some pieces of cloth) and most probably were levy'd as a tribute for that purpose, from the equality of what every man brought.

The circle of natives about the tent being pretty large they engag'd the greatest part of the afternoon in boxing and wrestling, the first of which they call Fanga'tooa, the other Foohoo.[1] When any of them chuses to wrestle he gets up from one side of the ring, crosses the ground in a sort of [measured] pace clapping smartly on the elbow joint of one arm, which is bent, and produces a hollow sound that is reckon'd the challenge. If no person appears from the opposite side to engage him he returns in the same manner and sits down, but sometimes stands clapping in the midst of the ground to provoke some one to come out. If an opponent appears they come together with marks of the greatest good nature, generally smiling and taking time to adjust the piece of cloth they wear which is fastened about the waste. They then lay hold of each other by the piece of cloth, or a girdle which they sometimes wear, with a hand on each side and one endeavours to draw his antagonist to him, which if he is so lucky as to effect he immediately trys to lift him upon his breast and throw him

[1] He has got the words reversed: *fuhu* is boxing, *fangatua* is wrestling.

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their antagonist and give him another very smart one with the other hand backwards. The boxing matches seldom last long, and the partys either leave off together or one acknowledges his being beat in that manner, but they never sing the victory in these cases unless one strikes his antagonist to the ground, which shows that of the two wrestling is their most approv'd diversion. Not only boys engage as often as the men in both these excercises, but frequently little girls, who are generally mention'd by some person in the circle, box very bitterly for a short time; in all which cases it does not appear that they ever consider it as the smallest disgrace to be vanquish'd, and the person overcome sits down with as much indifference as if he had never enterd the lists. Some of our people ventur'd to contend with them in both excercises, but were always worsted, except in a few cases where it appear'd that the fear they were in of offending us gain'd a greater share of the victory than the superiority of the person who engag'd.

THURSDAY 19th. The weather pretty good but at night cloudy with some showers of rain. Our people employ'd as usual. The Captain made a distribution to day of the live stock he intended to leave here, giving a heifer, bull and cow to Poulaho, a horse and mare to Feenou, and a ram with two ewes to Mareewagee, at the same time time giving directions how they should be rear'd and propogated: but they did not show any particular marks of satisfaction as if they considerd them a usefull acquisition.

FRIDAY 20th. The wind E or EBN. Fresh breezes with cloudy weather. The people employ'd as usual. In the morning two of the Turkeys on shore were missing, and upon suspicion that the Indians had stole them the Captain confind Poulaho & Feenou with a guard at the tent, and orderd a large Canoe that was along side the ship to be detain'd; but they were soon releas'd on producing an axe and wedge & one of the Turkeys that had been stolen before, with a promise to restore the other Turkey.

SATURDAY 21st. The wind Easterly. Moderate breezes with fine weather but at night a few showers and squalls. The Indians, many of whom had been absent for two days from their being unable to procure victuals upon the spot, collected in great numbers about the tent and in the morning two large piles, each compos'd of the trunks of four trees plac'd near [each] other in a square about thirty feet high, were erected with pieces fastend across to get up by. These were fill'd to the top with large yams, and in the forenoon a number

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of people brought a good many fish which were chiefly mullet, and others carry'd small ones stuck on branches as at Mareewagees though more numerous in a kind of procession. They also brought a small Turtle and afterwards a great many more Yams, all of which with a piece of cloth, a mat and bit of red feathers were given as a present to the Captain by Poulaho, besides two hogs which were carry'd up and fasten'd to crown the two piles of Yams. About one o'clock they began the Mai or dances, the first of which was almost a copy of the first we saw at Mareewagees house. The second was conducted by the Toobou, who also danc'd there, and had four or five women in it who went through the several parts with as much exactness as the men. Towards the end they divided to leave room for two men who excercis'd their clubs as mentioned in the first dances, and in the third which was the last two more did the same. The dances were succeeded by wrestling and boxing, and one man entered the lists with a sort of club made from the stem of a Cocoa leaf which is firm and heavy, but could not find one that would engage him at so rough a sport. At night we had the Bo'mai repeated, in which Poulaho himself danc'd, but neither these nor the dances in the day were so considerable or carried on with such spirit as those at Mareewagees, which proves that in this as well as other countrys there are private men able sometimes to give entertainments superior to their Kings.

SUNDAY 22. The wind Easterly. Fresh breezes with cloudy weather. The people unemployed. Some of our Gentlemen set out yesterday morning to see the interior part of the island, and after walking some way met with a lake or Lagune which they cross'd in a Canoe, and is probably an arm running from the Bay mentiond before to the westward as they did not see its communication with the sea. They then cross'd to the opposite side of the island, some parts of which they found very well cultivated, and stay'd all night but found the inhabitants not very willing to supply them with provisions though they treated them civilly in other respects. On returning back to day one of them had his gun unexpectedly snatch'd from him by some of the people that follow'd them, and another trusting a young man to carry his lost it by the other setting off though he had carried it many miles.

MONDAY 23. The wind from NE to NNW. Moderate breezes with dull cloudy weather, a close air and in the evening a good deal of rain. In the morning the cutter with the Master and the Discoverys cutter

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were sent to sound for a passage that way to Middleburg. The people employd as usual and the Launch in watering at Pangia-motoo. 114

TUESDAY 24. Calm in the morning and clear but afterwards light breezes from the southward and then NE with cloudy weather. The two boats return'd a little after noon and had been as far as the eastermost isles lying off Tonga. They found a narrow passage between Makkahàá and Mon'ooafai to the eastward of which it is broader and beyond the isles a clear sea to Middleburg. Few Canoes have been off these two days and many of the large sailing ones have gone to some other place or other islands. There has also been little trade carried on with the natives on shore. 132 114 [133] [439]

WEDNESDAY 25th. The wind ESE or EbS. Moderate breezes with cloudy weather. The people employ'd in bringing off yams of which we have a great quantity on shore, wood &c. The cutter with the Discoverys and the Master were sent to sound a passage to the westward in case we should not be able to get out by the other but found the place we came in by the only accessible one and that scarcely so should it happen not to be very fine weather. Few Indians off at the ship and scarcely any on shore nor do they bring any thing to barter. They have labour'd under some apprehensions ever since the chiefs were confin'd and are now very anxious about our departure as they see us making no preparations to do it. Poulaho entertains the same notion as the other people and has had his Canoe riggd to set out for Vavaoo. He mention'd his fears to the Captain who told him that we had no intention of staying & that if he would carry him to his house in the country he would order the tent and things to be carried off at their return which made him alter his resolution of going to Va'vaoo and promise to go to morrow. 132 114 439 648 643 [634]

In the morning about a pretty smart shock of an Earthquake was said to be felt by several of our people on shore, which did not last above three or four seconds but a tremulous motion & rumbling noise continued several seconds after. 133

THURSDAY 26. The wind ESE. Fresh breezes with cloudy weather in the forenoon but afterwards clearer. In the morning the Captain set out with Poulaho and we row'd up the bay where we had been before, in which at one place was about twelve Canoes fishing in company, with Poulahos son & successor in one of them, either for his amusement or perhaps learning a necessary part of his education. Their method of fishing was by shooting a seine upon one of the shoals and surrounding it with their Canoes, on which a man got out from each and took a net of an oblong shape fastend by each side to a slender pole of seven or eight feet long, with which every boat was 132 226 [648] [643] [644]

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where we found several people bathing, but the water was too salt to use and we always found that what they call'd good water was almost intolerable to us, a sure proof that they are entire strangers to it generally speaking. In one place where it still continued to run out from under the rock it was somewhat fresher, & might probably be still more so the longer the water ebb'd, but it was difficult to say whether this would have been a constant source supposing the tide never reach'd it, or only a certain quantity wash'd from the earth during the time the last remaind in these vacuitys and mix'd with it.

When we return'd in the evening Poulaho had a pretty large hog dressd for our entertainment, with Yams, Cocoa nuts &c and afterwards provided us with as good a lodging as his house could afford, giving us mats to sleep on and cloth to cover us, but our host had made himself so happy with some wine & brandy we had brought that it was a matter of much indifference to him where he lay.

FRIDAY 27th. The Wind ESE. Moderate breezes fine weather. In the morning Poulaho told us he was going presently to perform a ceremony call'd Tooge[1] which they do at the death of their relations and even in other distressing situations. It is done by striking the highest part of the cheek bone alternately with the inside of the fists for some time, which abrades the skin and makes the blood flow out in a considerable quantity, at the same time accompanying it with a dolefull kind of cry or weeping. We were glad to have an opportunity of seeing a custom so universal that perhaps eight in ten of them retain the marks of having perform'd it, and great numbers of them very recent, at which time it looks as if a hollow circle [were] burnt in; but were disappointed at last, for though he went to an inclosure where a large circle of people were sitting to drink Kava we saw no other ceremony than he and the people that were with him putting some green leaves about their necks, which they broke and threw down when they came to the place. We had seen them drinking the Kava sometimes at the other islands, but by no means so frequently as here, where it seems the only forenoon employment of the principal people and the drinking it is confin'd to them only, unless they chance to prepare a little more than is wanted when it is distributed to any person indifferently. The Kava is a species of pepper[2] which they cultivate for this purpose and esteem it a valuable article, taking great care to defend the young plants from any injury and commonly plant it about their houses. It seldom grows to more than a mans height, though I have seen some plants almost double that, and

[1] *tuki.* [2] *Piper methysticum.*

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It rests upon a narrow base, the upper part projecting very considerably, and is cover'd with E Toà and Pandanus trees. At night there was a vast number of lights along shore to the westward which we suppos'd was the Indians fishing.

SATURDAY 28th. The morning calm but afterwards brisk breezes from WNW with fine weather till the evening, when it veer'd to the Sºward with drizzling rain. The people employ'd as usual.

Few Canoes off and all the Indians have left the place near the tent except a few villains who are very troublesome & constantly endeavouring to commit some petty theft. They were so audacious as to throw cocoa nuts at some of our people (which however might in a great measure be imputed to their own imprudence in admitting these people to childish Libertys with them at first) and threaten them with clubs, for which we seizd three of them, tied them to trees and flogg'd them very severely, afterwards cutting a large cross in the arm of one with a knife which was certainly the least excusable part of the punishment. One of them was also fird at in the morning for some flagrant attempt of the same kind by a centinel, who certainly hit him, as he was seen to be supported by several others after crossing the small creek near the place.

SUNDAY 29th. The wind E. Moderate breezes with good weather. The people unemploy'd.

MONDAY 30th. The wind . Gentle breezes with dull close weather and some small rain the afternoon.

Two of us went along with Futta'faihe as visitors to his house which is at Mooa very near his brother Poulahos. A short time after we arriv'd they kill'd a pretty large hog which is done by repeated strokes on the head, and scrap'd the hair off very dexterously with the sharp edge of pieces of split Bamboo, taking the entrails out at a large oval hole cut in the belly by the same simple instrument. Before this they had prepar'd an oven which is a large hole dug in the earth, fill'd at the bottom with stones about the size of the fist, over which a fire is made till they are red hot. They took some of these stones wrap'd up in leaves of the bread fruit tree and fill'd the Hogs belly, stuffing in a quantity of leaves to prevent their falling out and put a plug of the same kind in the Anus. It was then put on some sticks laid across the stones in a standing posture and cover'd with a great quantity of Plantane leaves, after which they dug up the earth all round and coverd it closely up, leaving it to bake in that manner. In the mean time we walk'd about the country, but met with nothing

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continuation of the mourning ceremony by way of condolance, for upon enquiring who it was done for they said it was a chief who had died at Va'vaoo some time ago, that they had practic'd it ever since and would do it for a considerable time longer.

In the evening we had a pig dress'd as the hog with Yams and Cocoa nuts brought for supper, and Futtafaihe finding we did not like the scruples they had made before to accept of any part of the entertainment, ask'd us immediately to share it & give it to whom we pleas'd. When supper was over abundance of cloth was brought for us to sleep in but we were a good deal disturb'd by an odd custom, at least amongst the better people, of being beat while they are asleep. Two women sat by Futtafaihe and perform'd this operation, which is call'd Tooge Tooge,[1] by beating briskly on his body and legs with both fists as if on a drum till he fell asleep, and continued it the whole night with some short intervals. After being asleep they abate a little in the strength & quickness of the beating, but resume it if the person is likely to wake, and towards the morning we found the women relievd each other by turns & went to sleep. In any other country it would be suppos'd such a practice would put an end to all rest, but here it certainly acts as an opiate and is a strong proof of what habit may effect. The noise made by this was however not the only thing that prevented our resting, for the people who slept in the house not only convers'd amongst each other frequently as in the day but all got up in the midst of the night & made a proper meal of fish and yams, which were brought to them by a person who seem'd to know very well the appointed time for such things.

[JULY 1777]

TUESDAY JULY 1st. The wind N and NNW. Gentle breezes with fine weather. In the morning we set out with Futtafaihe and walk'd down the east side of the Bay to the point that is opposite Hoolaiva. The country all along this place is very well cultivated but in general not so much inclosd as at the bottom, and amongst many others that are very large we pass'd one plantane field at least a mile long which was in excellent order, every tree growing with great vigour and not a bit of grass to be seen. We found that in travelling Futtafaihe excercis'd a power, though by no means wantonly, which pointed out the great authority of some of the principal men, or is perhaps only annex'd to the royal family; for he sent to one place for fish, to another for yams &c and so on at other places, which were always brought with the greatest readiness as if he had been absolute master

[1] hukituki.

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of the peoples property. On coming to the point they mention'd some thing of a person who they said had been fir'd at by some of our people, and upon our wishing to see him they carried us to a house where we found a man who had been shot through the shoulder, but not dangerously, as the ball had enterd a little above the inner part of the collar bone and pass'd out obliquely backwards. We were sure from the state of the wound that it was the person who had been fir'd at by the centinel the day the others were punishd, though positive orders had been given that none of them should load their pieces with any thing but small shot. There had been no application made to it and the people about him seem'd to be very little concern'd at the accident, nor indeed the man himself farther than his being oblig'd to sit still from the pain and swelling which was considerable. We gave them some directions how to manage it & they seem'd pleas'd when we told them it would get well in a certain time: but what is singular, on our going away they ask'd us to send him some Yams & other things for food, and in such a manner that we could not help thinking they imagin'd it was our duty to support him till he should get well.[1]

In the evening we cross'd the Bay in a Canoe which Futtafaihe had excercisd his prerogative in procuring by calling to the first that pass'd by, and found fault with the people because they did not seem to come immediately as they were calld to. He had also got a large hog at this place and brought a servant from his house with a bundle of cloth which he wanted us to carry as a present from him, but the Boat being small we objected and he order'd it to be brought over next day. We got off the remaining horses, Cattle and sheep as preparatory to our leaving the place.

WEDNESDAY 2d. The wind SE. Moderate breezes with dull cloudy weather and some rain in the morning.

[1] Compare King's account on the Tongan point of justice. They went to the man, '& found him in a very grave temper, with his wife & some friends sitting by him . . . nature was doing her part, the seperation had begun, & the Doctor said he did not doubt, but left to itself it would have done well; the parts about were swell'd & inflam'd & the man complaind of not being able to lay himself down; we had about us some linnen & the Doctor cleand the wound & applyd some lint to the place, & made them well understand, how they were to proceed in future, he direct'd them to clap a Poultice of Plantain, but we were a little surpris'd on his wifes not asking as a favour, but as matter of justice something to buy him Plantains, & not for this purpose only, but food for her family, saying that they had nothing of their own, living upon the labours of the wounded man who was a Fisherman, & that as we had depriv'd him of earning his & their livelyhood, we should keep them; We had a long Altercation on this point, but some grave old men nodded in favour of our arguments when we told the woman, that had he been fishing for his family when he attemptd the theft for which he was punishd, she woud not now have want'd our assistance. The man recover'd his spirits instantaneouly on our assuring him that he woud not die of this wound.'—Adm 55/116, f. 93v.—In the Tongan context, the idea of 'buying' plantains is rather surprising.

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THURSDAY 3d. The wind SE. Moderate breezes with dull cloudy weather. In the morning we unmoord and after breakfast weigh'd and stood round the W end of Pangia-motoo, anchoring on its NW side in 17 fathom that we might take the advantage of a westerly wind to pass the narrow[s] between Makkahàá and Mon'ooafai which leads out to the eastward.

FRIDAY 4th. The wind ESE or SE. Moderate breezes with dull cloudy weather and some rain. The Indians begin to collect again about the tent as we have had more for these two days than some time past, & they also bring a few Yams & other things to Barter.

SATURDAY 5th. The wind SE and SSE. Fresh breezes with close gloomy weather and frequent showers of rain.

We had an Eclipse of the sun to day, the earliest beginning of which that could be observ'd happend at hours minutes seconds, but it was totally obscur'd by clouds a great part of the time it lasted especially towards the end. For several days before a great many spots were seen in that body which daily chang'd their number, magnitude & situation, but amongst others there was one place which had a groupe exactly like a cluster of nine islands.

The tent was struck and carried off in the morning and after the Eclipse the Observatory with all the other things and the party of marines went off.

SUNDAY 6th. The wind SBE or SSE. Fresh breezes with dark cloudy weather and some showers of rain.

MONDAY 7th. The wind SSE. Fresh breezes with some strong squalls and dark cloudy moist weather.

TUESDAY 8th. The wind SSE. Fresh breezes with cloudy weather in the morning but afterwards clearer and more moderate. The Launches of both ships were sent to Mooa with the Cattle & horses that had been left, and the Captn went to the same place to see a Ceremony which Poulaho told us when we went last to visit him was to happen about this time. We understood then that it was to be an initiation of his son and heir into some privileges, amongst which was that of eating with his father which he had never yet done, and as it was only ceremonial that he would just eat a single mouthfull of Yam & his father the same. We found Poulaho in his circle of Kava drinkers who told us that the ceremony would begin by and by, but begg'd it as a favour that we would appear with our heads uncoverd and our hair loose. About eleven oclock we went to the Ma'laee where we were carried the first time of going to Mooa, but saw very

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close but we cut holes in it with our knives, to which they made but few objections, and saw two or three hundred people sitting on the grass near the end of a road that opens into the Area. In a little time a few men carrying some small poles and old Cocoa nut leaves came with which they erected a small shade or roof near the middle of the space, and upon their first appearance an old man pronounc'd a long oration in a serious tone much after the manner of some itinerant preachers, which with a shorter one spoke by a different person after he had finish'd lasted all the time the shade was raising.

Soon after came Poulahos son with a few attendants who sat down a little aside from the shade, and shortly after thirty women well dress'd walking slowly by pairs, each pair holding a narrow piece of white cloth by the ends, which they carried to where the young prince sat and retir'd to a distance, his attendants wrapping the pieces of cloth that were brought about his body. Poulaho then appeard with three or four attendants and sat down at a considerable distance from his son, who then went and sat down under the shade with the people that attended him, and a considerable number more seated themselves upon the grass before the shade or as it might be calld the royal Canopy of these people. Three companys of six or seven each then got up from amongst the large crowd a little after each other, and running hastily to the opposite side of the Area sat down for a few seconds and return'd running in the same manner. To them succeeded two men, each of whom held a small green branch in his hand, who got up and approached the prince, sitting down for a few seconds three different times as they advanc'd, and then turning their backs returnd in the same manner, inclining their branches to each other as they sat. In a little time two more did the same, after which the people we had seen traversing the roads in procession came in and laying down their sticks a little to the right of the shade, sat down at a distance, closing their hands which they held before them with the most serious aspect as they retir'd, during which time a person kept pronouncing an oration (perhaps a prayer?) in a melancholy tone. A profound silence ensued for a little time and then five or six men rose successively, some of whom were call'd by name, and each broke one of the sticks, after which the people sitting before the shade seperated to make a lane through which the prince with his attendants pass'd and the ceremony ended.

WEDNESDAY JULY 9th. The wind SSE. Moderate breezes with fine weather. Having not observ'd Poulaho or his son eat as had been expected yesterday we enquir'd the reason and found the Ceremony

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perhaps to insure the succession wishes to see it done whilst alive. This seems the more probable as all the principal people we had yet seen assisted in the procession, and the solemn manner in which it is executed appears as if they held it in a religious light, which is probably done to secure the performance of promises which are often broke if made independent of any such tie. The present Natche might then be consider'd as merely ceremonial, for the small quantity of yams that we saw the first day could not be intended as a general contribution, and indeed they made us sensible they were a portion consecrated to the O'tōōa or divinity. But they inform'd us that in two months there would be one of great consequence in which not only the tribute of Tonga but that of Hapaee, Vavaoo and all the other isles would be brought to the chief, and confirm'd more solemnly by sacrificing ten human victims from amongst the inferior sort of people on the occasion, an action that ought to be imputed rather to the rigid execution which old superstitious customs require than the inhumanity of these people. On enquiring the reasons of so barbarous a practice they only said it was a necessary part of the Natche, and that if they omitted it the Deity would certainly destroy their King for his impiety—a lesson which though it teaches us the propriety of discharging religious duties is at the same time a strong monitor against admitting superstition into the religion and policy of a whole nation or even particular sects.

THURSDAY 10th. The wind from SSE to ESE. Moderate breezes with fine weather. About eight in the morning we got under way and work'd through the passage found by the Master between Makka'hàà and Mon'ooafai, which in one place is not above a quarter of a mile broad but continues narrow for a small space only. Its direction is about SSE and NNW, the wind at this time blowing directly in opposition to us, but we had the advantage of a flood tide which set us fast through and a fine clear day which plainly discoverd the shoals on every side. After getting through there is a passage sufficiently broad between the shore of Tonga and the small islands Onne'vy &c clear to the eastward in which we work'd, but made little progress in the forenoon as the wind veer'd between SSE and ESE. About four in the afternoon we opened the N point of E'ōōa or Middleburg as we stood off, but finding no ground without stood in and about sunset anchor'd in forty two fathom a fine sandy bottom, less than half a mile from a narrow reef that runs parallel to & join'd with the shore of Tonga, the N point of the island bearing ENE, one to the westward of us from which a spit runs and Eoo'éegee

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The Discovery intended to bring to a little to the Westward of us where her boat lay in fifty fathom, but missing the bank she drove off though they veer'd above a hundred fathom cable, and did not get up till twelve oclock.

FRIDAY 11th. The wind ESE and EbS. Moderate breezes with dull close weather. In the morning we hoisted in the boats and in the forenoon got under way, working up between Tonga and the isles without as yesterday. A reef connects all these isles together except Eoo'eeegee (which is the largest and most easterly) and also surrounds them, but there is no anchoring near it, for in the afternoon when about two cables length from the reef off Noogoo we had no ground with less than 62 fathom. In the evening we opened Middleburg, whose N end is a high bluff point and the rest appeard much as when the Resolution made it on the East side in 1773, so that it seems narrow, but we made so little progress today that we did not weather the NE part of Tonga till ten at night, passing between that & Eoo'eeegee.

We had now been a month at Tonga and six weeks more amongst the other isles, during which time we were not only plentifully supplied with hogs & vegetables but carried some of the first to sea and as many Yams as would serve the ships company near two months, besides having salted of Pork while we staid. The peacable terms that we liv'd on with the natives while here (if we except a few triffling quarrels unavoidable in the best govern'd nations) was by no means the smallest part of the satisfaction we receivd from visiting this cluster of islands, (which Captn Cook from similar treatment call'd Friendly Isles in 1773 & 1774) and I believe few people who were unprejudic'd left them without some regret.

Amsterdam, Tonga or Tonga'taboo is the most considerable of these islands and the seat of government, not only all the islands that we saw being subject to it but several others that will be mentiond afterwards. It is about twenty leagues in circuit, somewhat oblong, though by much broadest at the east end and its greatest length from East to west. The South shore which I saw in 1773 is straight and consists of coral rocks eight or ten feet high terminating perpendicularly, except in some places where it is interrupted by small sandy beaches on which at low water a range of low black rocks may be seen. The W end is not more than five or six miles broad but has a shore something like the last, whereas the whole north side is invirond with shoals and islands and the shore within them low and sandy. The E side or end is most probably like the S, as the shore begins to

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

137 to any country that produces them. The Boogo which is the largest tree of the country, and a species of fig with narrow pointed leaves are the most conspicuous for their size,[1] and on the uncultivated spots especially towards the sea the most common bushes and small trees are the Pandanus, several sorts of Hibiscus, the Faitanoo [764 241] already mentioned and a few others. It ought also to be observ'd that though the materials for forming grand Landscapes are wanting, there are many of what might at least be calld neat prospects about the cultivated grounds and dwelling places, but more especially about the Fyatokkas or burying grounds, where sometimes art, sometimes 132 nature has done much to please the eye. From its situation towards the tropic the climate is more variable than in countrys farther within that line, though perhaps that might be owing to the season of the year which was now the winter solstice. The winds are for the most part from some point between S and E, and when moderate are commonly attended with fine weather. When they blow fresher the weather is often cloudy though open, and in such a case there is frequently rain. It sometimes blows from that quarter for a fortnight together and will then veer to the NE, NNE or even NNW, but never lasts long nor blows strong from thence though it is commonly accompanied by heavy rain and close sultry weather. Very hot weather and lightning are almost sure presages of a change, and that commonly to rain, but seldom to strong winds which indeed from 821 many circumstances are probably very rare here. The natives are very sensible of the changeable weather and seem tolerable judges of what will happen, so far at least that they manage their sea affairs from such a knowledge, and are often glad at the approach of rain (though it is immediately disagreeable to them) from the advantage deriv'd to their Yams &c by it. The quick succession of Vegetables has been already mentioned, but I am not certain if the changes by which that is brought about are considerable enough to make them perceptible to the natives as to their method of life, or rather that 132 they should be very sensible of the different seasons. The heat often rais'd the Thermometer to degrees while we stay'd and I imagine when the sun is vertical it will not be above degrees more, so that if we consider the effect as produc'd gradually the difference cannot be very great; though perhaps the most convincing proof of this small change is the state of the vegetable creation which is never so much affected by them with respect to the foliage as to shed that all at once; for every leaf is succeeded by another as fast as it falls

[1] The Puko, *Hernandia ovigera*, can grow as high as 65 feet; and the *Ficus oblique* upwards of 100 feet.

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

which causes that universal and continual spring found here. It has I believe been alledg'd by some that the vicissitude of the seasons in more boisterous regions, as being more sensible and compleat, contributes much to the happiness of their inhabitants though I think it is hard to conceive how this is effected. If there is a pleasure in the transition from extreme cold to moderate heat how can the reverse have the same effect? Do the methods we are obligd to take to shelter us from the weather produce any particular pleasure? or does it not rather arise after that has been accomplish'd from the thoughts of being really secur'd from its disagreeable impressions by these means? But is not the man far more happy who has that pleasure constantly secur'd to him merely from his situation, where the temperature of the climate prevents its becoming an object of his care? The superior pleasure felt at the return of our spring has been urg'd as a circumstance not to be experienc'd in countrys where there is a continual one; but not to reply that people in such countrys can at least never suffer from the want of a thing they have never known, I am doubtfull whether the doctrine of objects losing their power of giving pleasure when too familiar extends to this article—at least I have never felt a wish to see the continual spring in these places blasted, to exchange the exquisite serenity of the weather when it is fine for the uncertain sunshine of perhaps half a day, or to give up the usual mildness of the mornings and evenings for the pleasure of looking at a hoar frost, or being under the necessity of sitting by a fire to procure that comfort which nature herself denies. The moon shine nights are uncommonly fine.

The basis of the island as far as we know is entirely a Coral rock, which is the only sort that presents itself on the shore, nor did we see the least appearance of any other stone except a few small blue pebbles strew'd about the Fya'tockas, and the smooth solid black stone something like the Lapis Lydius[1] of which the natives make their hatchets & may probably be found only in other islands, as a piece of slatey iron colourd stone was bought at one of them which was never seen here. Though the Coral projects in many places above the surface the soil is in general of a considerable depth. In all cultivated places it is commonly of a loose black colour produc'd seemingly in a great measure from the rotten vegetables that are planted there, underneath which is very probably a clayey stratum, as a soil of that kind is often seen both on low and rising grounds but especially in several places towards the shore where it is of any

[1] It would be the basalt found on, for instance, Tofua. 'Lapis Lydius' is a bassanite, a velvet-black quartz.

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

commodity, and amongst the small articles files or rather rasps were held in high estimation. They are undoubtedly of the same origin with the inhabitants of New Zeeland and the isles eastward, for though in some respects they differ in many others they also agree. Their first population happend no doubt in the same manner with the other islands of this vast ocean, and indeed from the great number of these already discover'd we can hardly be at a loss to form a judgment of this manner especially if it be allowd, which is not improbable, that they are much more numerous and at less distances from each other than is generally imagind. Necessity if not choice would soon force the surplus of people which must follow the population of a small isle to emigrate; and I believe a very short time would bring them to some other isle as yet uninhabited. Accident too as well as design has no doubt often had a share in peopling the different parts of the world, & this may be the case in all the places discoverd or visited in this voyage, though it might at first appear the people must be naturally the same. This is far from being the case, but we must attribute it to the different stock from which they sprung before their arrival in the south sea, or we must believe that at the creation every particular island was furnishd with its inhabitants in the same manner as with its peculiar plants and animals.

SATURDAY 12. The wind E. Fresh breezes with fine Weather. After weathering the NE part of Tonga last night the wind being rather favourable we stretch'd over for E'ooa and fetch'd it about two in the morning, but kept turning till day light and at seven anchor'd in the same place where Captn Cook had been in 1773, which he calld English road, in fathom water, one extreme of the land bearing the other , one end of Tonga , and the other . The Discovery did not anchor till some time after, when she brought to a little to the Soward and within us. Few Canoes came off but in one was the Chief nam'd Ta'oofa.[1] The Captn went on shore before and after dinner and found some water which was but very indifferent. They also traded for some Yams and above a dozen of hogs.

As we lay at anchor this island bore a very different aspect from any we had seen and forms a most beutifull landscape. It is higher than any we pass'd since leaving New Zeeland (as Kaó may justly be reckond an immense rock) not excepting Mang'ŷá and Wateeoo, & from its top which is almost flat declines very gently towards the sea. As the other isles of this cluster are flat the eye can distinguish

[1] Ta'aufa'a or 'Tiooncc'.

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

nothing but the trees that cover them, but here the land rising gently upwards presents us with an extensive prospect, where groves of trees are only interspers'd at irregular distances in beautifull disorder and the rest coverd with grass. Near the shore again it is quite cover'd with various trees amongst which are the habitations of the natives, and to the right of our station was one of the most extensive groves of Cocoa palms I ever saw.

SUNDAY 13th. The wind E. Fresh breezes with cloudy Wr & in the evening a little rain. Brought off a Launch load of water. Traded on shore for a good number of Yams and some hogs.

In the afternoon a party of us made an excursion to the highest part of the island, which was a little to the right, and in our way pass'd a deep valley or rather chasm which is very narrow. About half way up we could see that part of the island under us extended into a large down which had several risings interspersd with small clusters of trees, but quite uncultivated, and coverd with grass about the height of the knee where numberless cattle might be fed. On the top we found a round heap of coral stones which they call'd E'tchee as that at Tonga, and seem'd to say it was a mark of Poulahos sovereignty over the island. At this place was also a spring of excellent water, and though we found Coral rock at the surface, on crossing the deep valley which is several hundred feet above the sea we saw here a soft reddish rock and some sand stone. The top of the island from this to the north point is an extended flat like that before mentioned, behind which it rises gradually; but the east side of the island, though it has a flat like the opposite one, terminates in steep craggs towards the sea and is at this place in all not above five or six miles broad. Besides the plants common on the other isles we found on the height a species of Acrosticum,[1] Melastoma[2] and Fern tree[3] with a few other ferns and plants not common below. Amongst the rest was the Jeejee in its natural state which grows eight or ten feet high. We return'd by another road which led us through a wooded part of the country and about third way down met with a little pool of excellent water which kept running into a much larger below, but we could not follow it as the valley was rugged and the natives say it does not reach the sea unless when it rains much. We found they burnt the grass in many places but could not discover that it was intended for planting, although they have a few spots cultivated almost to the top.

[1] Probably this was the fern Hakato, *Acrostichum aureum*.
[2] *Melastoma denticulatum*, a branched spreading shrub called in Tonga Pesikuku.
[3] The fern tree Longolongo, *Cycas circinalis*, found all over Tonga, and especially common on 'Eua.

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

On returning we were informd that a party of indians had got into the ring where our people traded, struck one of their own people with a club which lay'd bare or as others said fracturd his scull & then broke his Thigh with the same, when our men interposd and sav'd him from being killd. He had no signs of life when carried to a neighbouring house but afterwards recoverd a little, and on asking the reason of so severe a treatment we were informd that he had been discoverd in a situation rather indelicate with a woman who was Taboo'd. We however understood that she was no otherwise Taboo'd than by belonging to another person & rather superior in life to her Amoroso, so that he had not transgress'd in any mysterious point as that word seems sometimes to imply. From this circumstance we had an oppurtunity of observing how they punish infidelity, but the female sinner has by far the slightest share for her misdemeanor as they told us she would only be slightly beat, & indeed the man in such cases perhaps seldom suffers death: as though this person seemd to us to have been very roughly handled they appeard to have no suspicion of his dying from it & said he would be well in a month, so that in all probability if the transgressor in these cases can keep out of the way till the passion of the offended party has subsided, he may escape with a very slight punishment.

MONDAY 14th. The wind ENE or NE. Fresh breezes with dark weather and in the afternoon a constant heavy rain and sultry air. Our people continued to trade on shore for a good quantity of Yams, Hogs and Fowls & some were employed to cut grass for the Cattle.

Some of us went several miles into the valley which runs between the upper and lower rising of the island to the S°ward. We found the country tolerably cultivated, the soil on the high grounds being chiefly a red clayey substance but below black and loose, and on examination it appeard that every spot of the grassy part would admitt of cultivation with the greatest ease & in all likelyhood yield every thing in the same abundance as those already planted.

TUESDAY 15th. The wind N and NNW. Fresh breezes with dull weather in the morning and then constant heavy rain till near the evening. A considerable swell set in upon the shore but the ships rode easy. Continued to barter for yams & other things as yesterday.

WEDNESDAY 16. The morning calm and the rest of the day variable breezes or calm. A large swell setting in which broke very violently on the shore, so that it was with great difficulty our boats got off at night, and it would seem that it is sometimes impossible to get out at

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

suppose we would never think of applying to on such occasions. It is therefore the best method if a single person or two should wish at any time to traverse the country to apply to the chief, who will send a guide which will be a perfect security against all insults, for if a larger company chuses to undertake such peregrinations they are seldom molested. At the same time it should be observ'd that it is every persons business to avoid giving them an oppurtunity of offering such insults, as it not only interrupts the good understanding which ought always to be cultivated with these people, both from a principle of humanity and as a means of obtaining with ease those supplys of refreshment which are always wanted by ships that visit them, but as it also exposes themselves to real danger: For though we cannot accuse any of the natives, however bad, of an intention to destroy or even hurt the person thus insulted, yet in the scuffle which must always happen before they can secure the cloaths which is their object a man may accidentally receive an irrecoverable blow.

THURSDAY 17th. The wind E. Gentle breezes and sometimes calm with close sultry weather and a good deal of rain. The Captn went on shore in the morning carrying the Indian with him whom he releas'd, and in the forenoon we weigh'd and steerd swbs to get an offing but afterwards hauld up SSE close to the wind.

Middleburg or as the natives call it E'ooa is only leagues from Tonga, and English road in Latitude Longitude E. The shore is every where bold, for the reef of reddish rock, almost like that at Wateeoo, which lines it in some places is scarcely a hundred yards broad. The island is of figure, about leagues in circuit, and as far as we know has no anchoring place but in English road. That as being an open road cannot be calld a place of safety, for though it lyes on the [west] side of the island experience has not yet convincd us that the winds from that quarter never blow with a strength sufficient to force a ship from her anchors, and the short time we lay there inform'd us that even when not blowing directly upon the shore a swell may be raisd which is both troublesome and may at times cut off all communication with the shore, as few Canoes came off to us at that time. Vegetables and hogs may be had in sufficient quantity, but water for the purposes of a ship is just as difficult to procure as at Tonga, and in other respects though a beutifull spot we found it much less convenient than that place. The anchoring ground too is not of the best sort as we found the Cable much rubb'd on heaving it up this morning. The people seem not to be in that excellent subordination we

56: Samwell D,T-5 (1777) 1967 OU9 Tonga OU9

kept their Drums. The soil is rich & good & the Climate equal & fine like most others situated in the same Latitude, where there is no cold Weather & the Inhabitants are not oppressed with Heat.

The Chief Produce of the Island is Cocoa nuts, bread fruit, Plantains & yams & Sugar Cane, all which the Country affords in great Abundance, & there are some Shaddocks, but not near so many as at Middleburg. Their Hogs are not so large as those of Otaheite nor so numerous, tho' we found plenty to supply the Ships while we staid among them, there are but few Dogs & many Rats on the Island and large Batts. They were very fond of our Cats some of which they stole, for which 2 or 3 of them were flogged on board the Discovery more than once. They have Variety of Birds some of which they used to bring on Sticks to the Ship to sell, such as Pigeons & a beautiful small green & red Parrot and they have plenty of Poultry about their Houses.

The Inhabitants of these delightful Isles are a handsome fine Race of People; the Men are rather above the common size, strong & exceedingly well made, of a dark copper Complexion with black Hair naturally, I say naturally because they daub it over with a Paste made of coral Powder which changes the Colour of it in different places into yellow, so that it is of a mixed Colour yellow & black, and this no doubt is the yellow Hair which Dalrymple takes notice of as having been seen by Quiros & other former Navigators to the South Seas, & which he supposes to be natural & therefore concludes that they are a different race of Men from the other South Sea Islanders who had not this custom among them, and therefore produces it as an Argument for the existence of [a] Southern Continent & that these were some of the natives. This practice is not confined to these people but common among other Islands in these Seas. They tattaw or mark their Loins & Thighs in various Lines according to their fancy, tho' there is an uniformity or standard to which they all approach like the Otaheiteans in tattawing the Breech. Some of them tattaw the Glans Penis. They all shave their beards, which is done with 2 small shells with sharp edges one laid under the Hair while they cut the beard with the other, & by this means they perform the Operation with expedition & get the hair off tolerably clean, tho' they always preferred our Razors when they could prevail upon the Ship's Barber to trim them.

Their Dress consists of a piece of Cloth tyed round the middle which descends as low as the Knee with sometimes a matt over it; others wear what they call a Pooraw[1] which is a Substance between

[1] *pulou.*

262 pineapple and papaya are eaten in season, and kava is widely grown.
[241] Pigs and chickens thrive and, along with fish and tinned corned beef,
[231] form the main protein in the Tongan diet.

131 Geographically and administratively the Tongan islands can be divided into three main groups (see map, Figure 2.2). Tongatapu and
[133] 'Eua in the south have by far the largest land area. The central Ha'apai group consists of small coral limestone islands. Lifuka, largest of the Ha'apai group, is 4 1/4 miles long and 1 1/2 miles at its broadest place. The Vava'u group lies 60 miles northeast of
[504] Ha'apai and consists of one large and several small islands. Neiafu harbor, Vava'u, is one of the best land-locked harbors in the South Pacific. In addition to these three main groups there are outlying islands to the north, including Niuafo'ou, Niuatoputapu, Tafahi, Toku, and Fonualei.

192 The temperature varies from the low 50°s to 90°, the humidity is usually very high, the mean being almost 80°. Annual rainfall is about 65 inches per year. There is usually a definite wet season from December to April and often a draught between October and December.
[312] Until recently all fresh water was rainwater. Tonga is subject to
[731] hurricanes and not infrequently thousands of coconut and banana trees, the basis of their cash economy, are ruined.

PEOPLE AND LANGUAGE

161 This is the geographical setting in which nearly 70,000 people play their daily social roles. The figures of the last Tongan census,

65: Urbanowicz E-4,5 (1970,1971) 1975 OU9 Tonga OU9

in numerous respects, are not superior to reputable eye-witness descriptions of aboriginal Tonga.[1]

CONTACT AND DESCRIPTIONS

Part of the Tongan archipelago was first contacted by the Dutch navigators Schouten and Le Maire in 1616, and various contacts with Europeans followed: 1643 (Tasman), 1767 (Wallis), 1773, 1774, and 1777 (Cook), 1781 (Maurelle), 1787 (La Perouse), 1789 (Bligh), 1793 (D'Entrecasteaux and Labillardière), and 1793 (Malaspina) (see Colson 1885; Tudor 1968: 125–127). These contacts between Europeans and Tongans lasted for periods of a few days to several weeks. The accounts of these men made Europeans aware of Tonga and placed Tonga on Europe's map. The accounts spurred Europeans to send men to proselytize the peoples of the Pacific. Tonga, along with Tahiti, was one of the first island groups to be sent European missionaries in the late eighteenth century.

The first missionaries were of the Missionary Society of London (form-

[1] Tonga, named by Captain James Cook "The Friendly Islands," is composed of some 150 to 200 islands and islets with perhaps only 25 percent of those being inhabited. The islands are a form of raised limestone, or volcanic formations and limestone formations (Anonymous 1944: 16). The most recent work indicates that the total land area of the archipelago is 256.42 square miles, with the Tongatapu Group (the main island of Tongatapu with surrounding small islands but excluding the island of 'Eua) having 100.37 square miles of that total or some 39.1 percent (Maude 1965: 218). Tongatapu Island is approximately 99 square miles in area. The estimated population for the entire archipelago for December 31, 1970 was 86,055 (Tapa 1971: 4).

The territorial boundaries of the Kingdom of Tonga were proclaimed by King George Tupou I to be 15°S and 23°S and 173°W and 177°W (*Tonga Government Gazette*, 2: 55, August 24, 1887). The islands of the Kingdom thus fall within a rectangle of the South Pacific some 596 miles North-South by 264 miles East-West, with the outer islands of the Kingdom being Niua Fo'ou Island to the North at 15°34'S and 175°40'W, and 'Ata Island to the South at 22°20'S and 176°12'W. 'Ata Island is approximately 100 miles southeast of the main island of Tongatapu and Niua Fo'ou Island is approximately 232 miles northwest of the Vava'u group of Islands.

Tonga derived its name from the principal island of the group, Tongatapu Island or 'sacred' Tonga. The *tapu* was probably appended to the Tonga because this island became the residence of the leaders of the archipelago. Tongatapu Island was the focal point for the political and religious system in the archipelago prior to and after European contact. The Polynesians who settled the archipelago appear to have chosen this relatively flat island because of terrain and climate. The middle, or Ha'apai group of islands are a series of low islets. The northernmost island group of Vava'u has relatively high hills, with most of the land being at least one hundred feet above sea level (as opposed to Tongatapu Island which is no higher than two hundred feet along the southern or *liku* coast). Vava'u was, and is, subject to more destructive hurricanes than Tongatapu during the hurricane season and it was only on Tongatapu that relative permanency of Tongan culture and continuity of leadership could be maintained for generations.

67: Maude K-5 (1961) 1973 OU9 Tonga OU9

Kao (not shown on the map), while Vava'u is a compact and comparatively hilly group, its surface made up of a series of terraces. The most common soil type on all these islands is a fertile, friable soil, termed *kelefatu* by Tongans, which varies in texture from a loamy sand to a clay. Although almost always underlain by coral limestone, the main parent material of this soil is volcanic ash, which gives it a mineral fertility very much higher than is usual for soils on raised limestone islands. The other main soil type is *tou'one*, a sandy and less fertile soil found at low elevations close to the sea. Although present in all the islands of raised limestone formation it is proportionately most important in Ha'apai, where it may occupy up to half the area of some of the settled islands. It appears to be derived entirely from coral sand or limestone and decayed vegetable matter, with perhaps the addition of small amounts of volcanic ash and pumice.

Rainfall is generally sufficient for good plant growth, with the northern group, Vava'u, having a more humid climate than the islands further south. Mean annual rainfall increases from 1,700mm at Nuku'alofa (Tongatapu) to 1,780mm at Pangai (Ha'apai) and 2,180mm at Neiafu (Vava'u), while the percentage of dry months in the rainfall record, using Mohr's definition of a dry month (Mohr, 1944, 53–8), decreases from 23 per cent and 25 per cent respectively in Tongatapu and Ha'apai to 16 per cent in Vava'u. This combination of fertile, volcanically-derived soils, generally adequate but not excessive rainfall, and easy topography provides good conditions for crop production throughout all the main islands of Tonga.

POPULATION DISTRIBUTION AND DENSITY

The total population of Tonga in the 1966 Census was 77,429 persons, distributed as shown in Table 7.1. In the table Tongatapu and Vava'u have each been divided into two districts of contrasting density, and in Tongatapu an attempt has been made to obtain a realistic rural population density figure for the central and eastern district by subtracting both the population of the main town, Nuku'alofa, and the area of agricultural land surrounding the town from the calculation. Areas of high population density are the western tip of Tongatapu, and most of Ha'apai (where individual islands have densities ranging from 121 to 410/km^2). Densities are moderate in central and eastern Tongatapu (ranging from 96 to 159/km^2) and

Chapter II

THE KINGDOM OF TONGA AND THE RESEARCH SCENE

Geography and Geology

131 101 Tonga is an island nation situated near the western edge of the Polynesian culture triangle. The Kingdom consists of over 150 islands divided into three geographically separate groups: Vava'u in the north, the Tongatapu group in the south, and Ha'apai between them (Map 1). Niuafo'ou lies to the north of Vava'u and is the most northerly of the Kingdom's possissions. About 450 miles south of Niuafo'ou lies 'Ata, the most southerly extension of the archipelago.

133 Geologically Tonga consists of islands formed by two processes- volcanic eruption and elevation of limestone formations so that both "high" islands and "low" islands are represented (Thomas 1967: 13-18). By island type the archipelago is divided into two chains both running north by northeast, with the volcanic chain to the west of the corraline chain and running parallel to the latter.

132 Tonga has a climate of moderate temperatures and precipitation. Winds are generally from the southeast and seldom reach hurricane speeds. Rainfall, temperature, and humidity generally increase from the south to the north. For instance, in 1970 annual rainfall on Tongatapu measured 77.59 inches and on Hiuatoputapu 98.09 inches were recorded. Temperature on Tongatapu varied from a daytime high of 88.5° F.

[TEXT CONTINUED ON PAGE 13]

132 on February 16, 1970 to a nighttime low of 55.8° F. on July 17, 1970 (Tu'ipelehake 1970: 2).

Government and Political Organization

642 In June 1970, the Kingdom of Tonga emerged from status as a British Protectorate to a fully independent nation. Today the national government of Tonga takes the form of a constitutional monarchy. Tonga has 646 177 178 parliamentary institutions which appear to be based on a Western government model, but examination of content rather than form reveals Tongan principles at work.

> The Legislative Assembly is unicameral and consists of Privy Councillors, Cabinet Ministers, Representatives of the Nobles and Representatives of the People. Eleven councillors or ministers-all but two of whom are nobles, together with a further seven Noble's representatives, represent the traditional foci of leadership. They are theoretically counterbalanced by seven representatives of the people, many of whom in fact have been elected because of qualities important in traditional Tonga. The system bears superficial resemblance to its English model: it is western in its legal form, Tongan in its benevolent but autocratic practice (Walsh 1967: 120-121).

632 [504] Nuku'alofa, the major port, is the seat of government and the center of economic, social, and religious life of the Kingdom. Nuku'alofa [368] is also the location of most secondary schools and has the largest and [162] best hospital in the islands. With a population of 15,685, 21 percent of the Tongan population resides in Nuku'alofa. Between 1956 and 1966 [161] the town showed an increase in population of 70 percent (Fiefia 1968: 11). [199] Nuku'alofa is beginning to experience the problems of rapid population growth and the attendant phenomena of unemployment, crime, and the inabilities to handle new demands on government services. Walsh (1969:

241 planted is usually of less importance than the first and so on until the land is returned to fallow status. A typical garden sequence is yam ('ufi), perhaps two crops in succession of taro (talo), and then cassava (manioke) is planted until the plot is exhausted. The amount of care given a garden is an indication not only of the amount of care a certain crop might need, but also indicates the social value derivable from that crop. Thus yams receive more care than taro, and so on.

[412] All gardening done in Puke is accomplished with the use of three hand tools: the ubiquitous bush knife, the push hoe, and a long-handled spade. Fallow periods plus whatever nutrients the soil might receive from burning the brush before a first planting are the only aids utilized to refurbish the soil. Commercial fertilizers provided free by [654] the Agricultural Board are, however, now being used on palms. Ususally no effort is made to prevent wandering animals from a garden and pigs sometimes do extensive damage.

[731] In some years droughts threaten crops in the dry, cool months from [732] May to November, but irrigation is not practiced and is not practical [312] because of limited sources of water.

241 Most garden work is accomplished by men but wives often assist,
461 particularly in weeding. A Tongan anecdote proclaims that if a man takes his wife to the garden and has her work so that his work will take him toward her, he will be able to work much faster; but the situations both explicit and implicit in their theory are more fiction than real. [476] Men usually do choose to work together with at least one other man, and work groups of two to four are quite common. Sociability is important

128 For this dissertation examples are drawn from sources pertaining
101 to the Polynesian archipelago of Tonga. Tonga derived its name from
103 the principal island of the group, Tongatapu or sacred Tonga. The
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101 the residence of the leaders of the archipelago. Tongatapu island was
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174 pelago prior to and after European contact. The Polynesians who ori-
133 ginally settled all of the Tongan archipelago appear to have chosen
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133 terrain and climate. The middle, or Ha'apai, group of islands, tradi-
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Hunga Ha'apai and Hunga Tonga, are a series of low islets. The northern-
most island group of Vava'u has relatively high hills, with most of the
132 land being at least 100 feet above sea level. Vava'u was, and is,
182 subject to more destructive hurricanes than Tongatapu during the hurri-
cane season and it was only on Tongatapu that relative permanency of
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131 The territorial boundaries of the Kingdon of Tonga were pro-
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islands of the Kingdom thus fall within a rectangle of the South Pacific
some 596 miles North-South by 264 miles East-West, with the outer
islands of the Kingdom being Niua Fo'ou Island to the North at 15°34'S

76: Yuncker N-4,5 (1953) 1959 OU9 Tonga OU9

Presumably, the unintentional introduction of certain weedy species occurred at the same time. A good many cultivated species, together with many weeds, owe their presence to the visits of European ships, starting early in the seventeenth century and continuing with increasing frequency to the present time. Some of these alien species find optimum conditions for growth and multiplication, and have undoubtedly played a part in limiting or even exterminating some endemics or indigenous species through aggressiveness. A high percentage of the usual strand and weed species includes those frequently found on other Pacific islands and elsewhere in tropical countries.

There is little fresh water available other than that impounded in tanks from rainfall. Aside from occasional small localized areas, the low coral islands present a monotonous repetition of plantation weeds and fallow-resting plantations of second-growth "bush." The dominant crop is coconuts, and large areas have been cleared for the extensive plantations found on most of the islands. At present, the high market value of copra makes it the most important source of income for the islanders. The second most important export crop is bananas, of which 50,000 or more cases are shipped annually to New Zealand. The more rugged topography of 'Eua, and to a somewhat lesser extent of Vava'u, prevents the cultivation of some parts of the islands. As a consequence, there are more opportunities on these islands for the survival of native species. Some of the islands, especially 'Eua and Kao, still have significant timbered areas with some of the tree species reaching a diameter of more than a meter and offering a source of timber. Lumbering operations are being developed by the government on 'Eua which, together with the fact that more and more of the forested land is being cleared for new plantations, threaten to reduce or eliminate many of the native species. Too, this has caused a soil erosion problem on some of the slopes. Lumbering operations on the volcanic islands of Late, Tofua, Kao, and Tafahi, because of the present lack of harbor facilities, are all but impossible. It seems improbable, therefore, that much timber will be cut on those islands in the immediate future, and it is on those islands that many of the native species will have the best chance of survival. However, with any marked increase in population, it will eventually become necessary to colonize and develop such islands.

The climate of Tonga is pleasant during most of the year. The annual temperature ranges from a low of around 75° F. in July and August to a high of 85° to 90° F. from January to March. Slightly higher or lower temperatures are not infrequent. The humidity is comparatively high, ranging from about 88° in the warmer months to a low of around 72° in the winter period. The average mean rainfall is about 80 to 90 inches, with the wettest season during the first six months of the year.

The collections upon which this report is based were made on the islands of Tongatapu, 'Eua, Nomuka, Lifuka, Kao, Vava'u and Niuafo'ou between February and June 1953. Projected visits to 'Ata, Tofua, and Late were aban-

87: Wood M,Y-4,5 (no date) 1932 OU9 Tonga OU9

Disastrous hurricanes frequently occur, and the island has been ravaged as recently as December, 1930, February, 1931, and March, 1932. During the hurricane season Niua Fo'ou is not visited by small craft. Though the island has been so repeatedly devastated by eruptions and storms, and its condition seems to be more dangerous than that, for instance, of the uninhabited large island of Tofua, still there is no intention of abandoning it for a safer home closer to the main islands of the group.

Its present population is 1,291. The inhabitants are a distinct type, with local variations of the Tongan language due to ancient contact with Samoa and Uvea, but more intercourse with the rest of the Tongan group is causing these old words to fall into comparative disuse.

The "Tin-can Mail" is Niua Fo'ou's claim to distinction. As the harbour at Agaha is inconvenient, and the sea is generally too rough for canoes, the mail is taken by swimmers to the steamer which passes from Samoa to Fiji. The outgoing mail is generally wrapped in oiled paper and tied to sticks, and the inward mail is brought back from the steamer in a sealed tin-can.

THE CHIEF CORAL ISLANDS, WITH SCENIC AND HISTORIC PLACES.

'EUA. This island, which is of great age geologically, reaches a height of 1,078 feet, and has an area of 33 square miles. Although it is as large as Vava'u and contains fertile soil in abundance, its population of 348 is most disproportionate. Its inadequate harbour at 'Ohonua and the sometimes dangerous channel between the island and Togatabu, though disadvantageous to the progress of 'Eua, do not really explain the decline in its population; this is due rather to the proximity of Nuku'alofa with its attractions. Considering that many small islands in Ha'abai support numerous taxpayers who have no allotments, the neglect of 'Eua is regrettable.

'Eua was called Middelburg by its discoverer, Tasman, and Cook had a high opinion of its beauty and fertility. This island is unique in several respects. It has several small creeks which rise from springs in the hillsides and descend to the western shore;

[TEXT CONTINUED ON PAGE 79]

87: Wood M,Y-4,5 (no date) 1932 OU9 Tonga OU9

'Uiha is the burial-place of great chiefs, including Tubouniua, Tubouto'a, Tevita 'Uga and Vuna. The finest mound ('eji) in Tonga, named Maka Hokovalu, is situated on the north-west of this island. The village of 'Uiha also boasts six cannon taken from a kidnapping ship which met its merited doom while making a raid on the island about the middle of the 19th century.

Tugua was the residence of the highest personage in ancient Tongan society, the Tamaha.

Nomuka, in the south of the group, was visited by more voyagers than any other island in Tonga. The pond of fresh water from which Tasman, Cook, Bligh and others took supplies is readily pointed out.

Navigation lights have been placed at Muifuiva, in the south, and at Muitoa, Ha'ano, in the north of Ha'abai. Some islands cannot be approached in bad weather. Many of the smallest ones are uninhabited, though there are various traces of former habitation or of use for plantations or burial-places at Ofolaga, Kelefesia and the 'Otu Tolu.

VAVA'U OR HA'AFULUHAO. Three-fifths of this beautiful northern group is in one island, 'Uta Vava'u, but the remaining islands are only separated from the mainland by narrow channels. All these islands are comparatively high and undulating, thickly-wooded and very fertile. The highest point is 670 feet. From the hill called Talau, behind the chief town, Neiafu, a magnificent panorama can be obtained, embracing all the islands in the group. Along the northern coast of the main island there are very fine views from the high cliffs at the seat ('eji) of Salote near Hologa and at Ha'alaufuli.

The harbour of the main island is one of the most picturesque in the Pacific, though shallows and sandbanks make navigation difficult in some places. The Swallows' Cave, often visited by tourists, is on the north of Kaba. The secret cave, entered only by diving, which Mariner's story and Byron's poem have made famous, is situated on the north of the island of Nuababu ; here the young chief left his bride until they could embark for Fiji and be safe from the wrath of their relatives.

Neiafu, the port and residence of the governor, is beautifully situated, and good roads radiate from this centre. Until recently at least the average prosperity of the natives in Vava'u was rather higher than in other parts of the group, and they have expended their resources on European houses and European food to a greater extent than elsewhere. Vava'u is not as subject to hurricanes as the more northerly islands of Niua Fo'ou and Niua Tobutabu, but nevertheless it has suffered rather frequently, the last occasion being 13th March, 1932.

It is remarkable that Vava'u was the last part of Tonga to be discovered, the honour falling to the Spaniard, Maurelle, in 1781.

Various places recall the incidents mentioned in Mariner's history, and especially Feletoa, where the great fight of Finau Ulukalala II took place and where Finau himself was buried in 1809. Parts of the great trench, and also a cave and underground river, may be seen at Feletoa.

An ancient but incredible tradition states that a long wall of coral stones at Makave, known as the Kilikilitefua, was made by casting a stone for every first-born son in the district.

87: Wood M,Y-4,5 (no date) 1932 OU9 Tonga OU9

VOLCANOES.

The active volcanoes are Tofua and Fonua Fo'ou (Falcon Island), which have been described. Niua Fo'ou erupts every few years and is classed as dormant. Late and Fonualei may be called dormant, though many years have elapsed since they last erupted. 'Ata, Huga Ha'abai, Huga Toga, Kao and Tafahi are quite extinct. Submarine eruptions have been reported in recent years south-west and north-west of Togatabu, between 'Ata and Huga Toga.

LAKES.

In the craters of Tofua and Niua Fo'ou there are fairly large lakes, the lake in Tofua covering over three square miles, and those in Niua Fo'ou totalling six square miles. There is a shallow, salt lake or lagoon in Nomuka, 443 acres in extent; this lake is remarkable for its fish ('ava) which remain fresh for two or three days. There is also a small and fairly shallow lake in south-west Vava'u.

Except small creeks which flow from springs in 'Eua, and one in Niua Tobutabu, there are no rivers in the Tongan group, owing to the islands being small and mostly flat. Consequently, there is no wild animal life, and birds are comparatively few.

CLIMATE, ETC.

The climate of Tonga is semi-tropical and not as hot as Fiji and Samoa. Nevertheless, in midsummer the humidity is fairly severe, especially in the northern islands. Cool nights are generally experienced in Togatabu and 'Eua, and, compared with conditions in many other Pacific Island groups, the climate throughout Tonga is healthy.

The rainfall is fairly heavy, but much less than in Fiji and Samoa. The wet season is from the end of December to April; short but injurious droughts are sometimes experienced, more especially during the period October–December. The soil on coral islands is very porous, and water can be obtained by digging wells, but under modern conditions the people rely entirely on cement cisterns for drinking purposes.

Systematic meteorological records have been taken at Nuku'alofa only during the last six years (a comparatively dry period), and these include the following:—

Temperature:	Maximum,	90.4 degrees (January, 1930).
	Minimum,	51 degrees (July, 1930).
	Mean,	74.6 degrees.
Humidity:	Maximum,	100% on several occasions.
	Minimum,	49%
	Mean,	76.9%
Annual rainfall:	Maximum,	74.39 inches (1927).
	Minimum,	40.66 inches (1930).
	Mean,	62.9 inches.

Greatest number of days on which rain fell in one year: 193 (1927).
Least number of days on which rain fell in one year: 153 (1930).
Most rain in any 24-hour period: 8.52 inches (June, 1931).

87: Wood M,Y-4,5 (no date) 1932 OU9 Tonga OU9

132 The prevailing winds, which considerably temper the heat, are the South-East Trade Winds. The ocean-currents are also from the south-
133 east; interesting proof is found in the fact that wreckage from the steamer "Tahiti," which foundered about 500 miles south-east of Togatabu in August, 1930, had drifted to the east coasts of Vava'u and the Ha'abai Islands by the following December.

132 Hurricanes are seldom experienced in Togatabu, but they some-
731 times occur in the northern islands where they work great havoc to plantations and buildings. The most disastrous hurricanes of recent years happened in 1912 and 1913 in Vava'u and Ha'abai. Niua Fo'ou was ravaged by successive blows in December, 1930, February, 1931, and March, 1932, and the hurricane of December, 1930, destroyed almost every house in Niua Tobutabu.

731 Earthquakes are fairly common but are not severe, as a rule.
133 Instances of damage caused by tidal waves accompanying shakes are recorded in some places such as Lifuka and 'Uiha, low islands of Ha'abai.

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136 ANIMALS AND PLANTS.

23 Pigs, fowls and rats seem to have been brought to Tonga many
[43] centuries ago; as already noticed, Tasman, Cook and other voyagers
[175] exchanged iron goods for pigs and fowls. Hunting rats was a favourite
[224] sport of the chiefly archers in former times. Pigs and fowls still form the
[262] only meat-diet of the village-people. Their gardens are often spoiled by roving pigs; and these creatures infest some uninhabited islands such as Tofua, while the distant island of 'Ata swarms with fowls. Snakes
136 are unknown, but there are several varieties of lizard, including a green lizard (fokai). There are numerous insect pests, such as centipedes and mosquitoes.

23 Europeans have introduced horses, cows, goats, turkeys, etc.
[175] Cook presented the first horses, cows and sheep to Bau, Maealiuaki and
[177] Finau in 1777; the cattle were called Cook's "pigs" (buaka Tute) by the natives, a circumstance which has given rise to the fiction that Cook brought pigs to Tonga. These islands are not very suitable for sheep.

Government statistics show the following animals in Tonga in 1931:—7,467 horses, 1,661 cattle, 7 sheep, 18,231 pigs, 4,028 dogs, and 2,148 goats.

136 In 'Eua there is a green parrot which will not breed if taken else-
[237] where. Probably the strangest bird in the group is the megapodius
[565] (malau) at Niua Fo'ou which flies badly and leaves unusually large eggs to be hatched in the sand; this bird is also found in the Solomon Islands but nowhere between that group and Niua Fo'ou. The tavake is a bird whose blood-red tail-feathers were worn only by chiefs. As previously stated, the absence of running water accounts for the rather small number of birds in the group.

Reference has already been made to the large number of flying-foxes which find sanctuary at Kolovai, in Western Togatabu.

226 The sea everywhere abounds in fish, and sharks are plentiful. The people are expert fishermen, but of all their methods none is stranger

133
[312] and wells. Studies indicate that: the ground water table is always considerably less than a meter above mean sea level and it oscillates only a few inches; the effects of tidal oscillation (1.3 meters) on the water table extend only a few hundred meters inland; and the depth of the water table beneath the surface ranges from a few meters near sea level in the north to about 46 meters in the
[312] southeast. Also, a comparison of determinations made in 1959 and 1965 indicates that the chloride content in most wells is increasing, possibly as a result of seawater influx due to an excessively high pumping rate (Pfeiffer, 1971: 6-14).

As stated by Pfeiffer (1971: 1): "For additional exploitation of groundwater, it is necessary to know the thickness of the freshwater lens lying above the brackish and salty water in the deeper subsurface."

●132 **Climate**

The island of Tongatapu is barely within the tropics, almost on the Tropic of Capricorn. The island is under the influence of the maritime tropical (mT) air of the Trade Wind belt and, according to Köppen's system, would be classified as having an Am climate.

127
654 The following climatic description is based primarily on data from the government meteorological station in Nuku'alofa.

132 **Temperature**

Tongatapu experiences a mean annual temperature of 74°F (23°C) with only limited diurnal and seasonal variation. The mean diurnal temperature difference over a 22 year period (from 1949 to 1971) was only 11°F (6°C). During this time period, the following extremes were recorded: a high temperature of 89°F (32°C) on February 9, 1955; a low temperature of 51°F (10°C) on August 4, 1951; a high daily temperature range of 31°F (17°C) on January 22, 1971; and a low daily temperature range of 1°F (less than 1°C) on June 20, 1952.

The seasonal temperature range is only 8°F (4°C), based on mean values of 70°F (21°C) for the coldest months (July and August). Tongans recognize a "warm or summer" season (faha'ita'u mafana) from November to April, and "cold or winter" season (faha'ita'u momoko) from May through October.

[82] [133] There is little variation in temperature regimes for different stations throughout the island. As stated by Kennedy (1959: 19), "On winter nights, the temperature near Fua'amotu, 270 feet (83 meters) above sea level in the highest portion of the island, is (only) 2 to 3°F (1 to 2°C) lower than at Nuku'alofa (sea level)".

Air Movement

The prevailing winds are the trades which blow from the east and southeast with remarkable regularity through-

132 out the year (Table 2) and have a definite moderating effect on the yearly temperature range. From May to November, the winds blow mainly from the east-southeast, but during the

Table 2. Mean annual frequencies of wind directions (speeds over 3 knots) at Nuku'alofa (1963-1970).

	N	NE	E	SE	S	SW	W	NW
%	6	9	38	26	14	3	3	2

"hurricane season" (from late November to early April) they commonly blow from the east. During this same season, strong winds accompanied by heavy rain occasionally blow from the north or northeast. There is also a period from May to September when southerly winds often predominate.

The mean wind speed throughout the year is 9 knots and the mean range between the calmest and windiest month is only 5 knots. Heavy winds associated with tropical cyclonic activity are occasionally experienced from late November to early April. The frequency of these tropical cyclones is much greater in the northern Tongan islands than in Tongatapu (Cumberland, 1961:16). Nevertheless, these heavy winds, which are referred to by the Tongans as afa, occasionally cause considerable agricultural damage on Tongatapu. Since 1951, there were three tropical cyclones with winds from 40 to over 60 knots. These destroyed, respectively, almost 100%, 50-75% of the currently

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731
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[821]

132 bearing banana trees as well as many green coconuts and other food crops in the eastern parts of Tongatapu (Tonga Chronical; January 17, 1960:1, November 27, 1964: 1; and January 16, 1970: 1). Associated with these winds are heavy rains, which add to the damage by loosening the soil and root systems of plants.

[821] Although the cyclonic afā is the most common gale force wind, there are also infrequent local whirlwinds, known as 'ahiohio, which cause considerable damage. Such an 'ahiohio hit the southern islands of the Ha'apai group in January 1968 and destroyed 90 percent of the banana crop as well as coconut trees, breadfruit trees, and other valuable subsistence food crops (Tonga Chronicle, February 2, 1968: 1 and 8).

132 Rainfall

Seasonality in Tonga, as in other tropical areas, is based more on rainfall than on temperature differences. The mean annual rainfall for Tongatapu is 74 inches (187 centimeters) per year, most coming between late November and early April (Table 3). The rainiest year on record was 1971 with 114 inches (291 centimeters). The driest was 1946 with 39 inches (99 centimeters). The wettest day on record was January 24, 1952 with 11 inches (28 centimeters) of rain. The average annual number of rainy days (more than 0.01 inches or 0.025 centimeters) is 167.

132 Table 3. Mean rainfall at Nuku'alofa (1945-1970).

	J	F	M	A	M	J	J	A
inches	9.0	9.7	9.5	6.4	3.7	3.3	3.8	4.1
centi-meters	22.9	24.6	24.1	16.3	9.4	8.4	9.7	10.4

	S	O	N	D	Annual
inches	4.6	5.0	4.6	6.4	74.4
centi-meters	11.7	12.7	11.7	16.3	188.9

Much of the rainfall is a result of troughs of low pressure, known as easterly waves, which move slowly westward through the Trade Wind belt. These disturbances occur chiefly during the summer and are characterized by extensive cumulonimbus clouds (Hare, 1964: 113). There are, on the average, about 17 days with thunderstorms per year on Tongatapu (Table 4). The cyclonic storms, although much

Table 4. Mean frequency of thunderstorms on Tongatapu (1949-1970).

	J	F	M	A	M	J	J	A	S	O	N	D	Annual
Days	2.5	2.7	2.7	1.9	1.1	0.8	0.4	0.7	0.7	1.8	1.0	1.1	17.4

132 The cyclonic storms, although much more severe and harmful to the agricultural economy, are infrequent and account for only a small proportion of the total rainfall over a period of years. Local convectional rainfall also contributes to the annual total.

Although, on the average, there are wet and dry seasons, there is considerable variability from year to year and rainfall is often unreliable (Figure 6). Periods of drought are often experienced between April and December, which affect copra yields, banana production, and subsistence crops. These periods of drought generally last no longer than one or two months, but even spells of one to two weeks can be detrimental to agriculture owing to the free-draining nature of the soil.

The unpredictable rainfall regime on Tongatapu also has periods of excessively heavy rain, which reduce yields of important tree crops. In 1972, for example, heavy rains during the flowering period of mango trees (Mangifera indica), according to Tongan informants, reduced the usually abundant mango crop on Tongatapu by an estimated 95 percent.

Despite occasional adverse conditions, the rainfall of Tongatapu is adequate to support not only the plant assemblages of the traditional Tongan agricultural system but also many introduced crops. Moreover, this rainfall, is uniformly distributed throughout Tongatapu owing to the absence of significant topographic differences.

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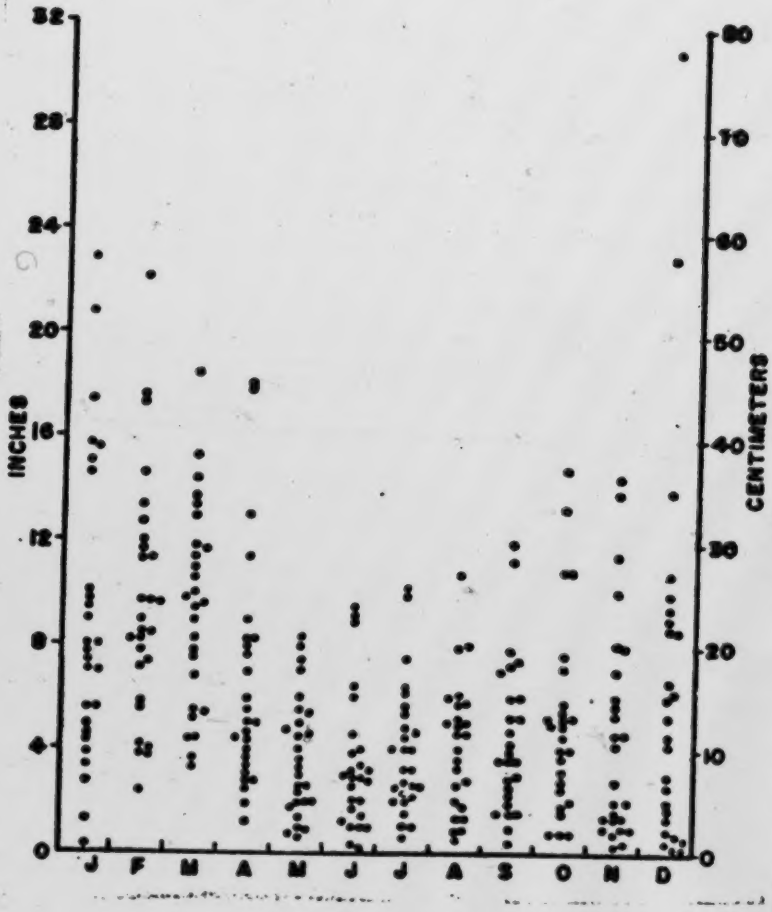

Figure 6.. Rainfall dispersion diagram for Nuku'alofa, 1945-1971 (format from Maude, 1965).

132 **Humidity**

The humidity in Tongatapu is relatively high throughout the year, averaging about 79 percent, with only minor differences from one season to another (Table 5).

Table 5. Mean relative humidity, Nuku'alofa (1949-1970).

	J	F	M	A	M	J	J	A	S	O	N	D	Annual
%	81	82	83	81	77	78	76	76	77	77	77	78	79

Although no quantitative data are available, sunny days on Tongatapu far out-number cloudy days.

132 In short, the climate of Tongatapu is mild and moist,
182 having adequate warmth, rainfall, and sunshine to support
241 a viable agricultural system. However, the yearly distribution of rainfall is unreliable, and often brings about periods of prolonged drought. The occurrence, although infrequent, of gale force winds also proves to be an adverse climatic factor.

Soils

127 Only limited data are available on the properties and distribution of Tongatapu soils. A preliminary soil survey was carried out by the New Zealand Soil Bureau (Gibbs, 1969) and analyses of selected soil samples have been carried out by Cottrell-Dormer (1941), Maude (1965), and Spier (1971). It is primarily upon these data that the

245 gence Division, 1944:81). The banana industry has since
439 experienced numerous problems and there has been
considerable fluctuation in exports (Table 26). The drop in
245 production in 1963 was a result of cyclone damage, while the
731 drop in 1952 resulted from a combination of drought in late
132 1951 and high winds in January 1952 (Tonga Produce Board,
1953 and 1964:1).

245 In addition to climatic variables, the banana industry
439 has been susceptible to a great variety of problems,
[655] including shipping strikes, low prices to growers due to
excessive overhead costs of the Produce Board, restrictive
quota system, poor quality packing by growers, and, most
recently, disease. In 1951, as a result of waterfront
strike in New Zealand, no vessels arrived during March and
there was an estimated export loss of 20,000 to 30,000 cases
(Tonga Produce Board, 1952).

In 1961 and 1962, banana quotas were reduced by New
Zealand, owing to balance of payments problems (Maude, 1965:
150). Trial shipments were then made to Japan in an effort
to open new markets and in 1964 four shipments were
[655] consigned to Japan. In many cases, farmers accused the
Produce Board of favoritism in assigning quotas. In 1966,
owing to floods in the Fiji Islands and a hurricane in
Samoa, these two areas could not fulfill their New Zealand
quotas and Tonga was free to ship as many bananas as
possible. This eliminated the attractiveness of shipping to

/11 cont./

101 [504] [731] volcanic eruption) and Niua Toputapu (with Tafahi). 'Ata, the southernmost island of the Archipelago, was evacuated shortly after 1861. (4)

4. Following the visit of a Peruvian slave ship.

132 The climate of the Tonga Archipelago, especially as regards the main group of Tongatapu, may be called more subtropical than tropical. (The difference with Samoa, for example, is considerable.) For the tropics it is an agreeable climate. Naturally, there is a difference between the northern and the southern islands of the extended Archipelago. Generally speaking, the maximum temperature lies between approximately 27 to 32 degreees Celsius; the mean temperature amounts to approximately 21 to 27 degrees Celsius. There is no sharp, regular seasonal change, so that one can scarcely speak of a "rainy season" and a "dry season." Rain may fall in every month. The division summer/winter is, however, justified, for heavier rains /12/ occur more often in the months from December to April (summer), along with higher temperatures and shifting, often easterly winds. In these months hurricanes may also occur. Lower temperatures (often with rather cool nights, especially on Tongatapu), along with usually lighter rainfall, or absence of rainfall for months and prevailing east-southeast (southeast) trade winds, are observed most years from May to November. Sometimes persistent droughts occur in the months of October to December.

133 Earthquakes are quite frequent, but generally so slight that they do not cause particular damage.

134 The Tonga Islands are relatively fertile (aside from soil depletion occurring on several densely populated islands). Vegetation 137 is in general luxuriant. The inhabited and several of the uninhabited 241 islands are almost completely covered with more or less well-tended plantings of the natives, save for the strips of bush around the edge

/44 cont./

515 equipment. In times of drought (often October to December) the
[132] supply of rain water is sometimes so scarce that people temporarily forego the daily thorough bathing.

515 /45/ Although in the schools, in the subject of hygiene, there
302 is general instruction in tooth brushing, and European toothbrushes are easily obtainable, only very few Tongans have so far used them. However, fingernails and toenails are cut quite short so that there
[412] is almost no rim and the nail surface is often circular. Nails
[198] are mostly cut with the large bush knife. Ancient Tongan cutting
302 tools (shells, bamboo) are no longer used. For shaving, the two
177 shells, the pumice and the shark's tooth (100)
[113]

100. Cf. J. Cook, Beschreibung.../Description/ loc. cit. VI. p. 181; J.J. Labillardiere, Relation du voyage a la recherche de La Perouse /Account of the voyage in search of La Perouse/ vol. II. Paris 1800. p/120; E.A.W. von Zimmermann, Australien /Australia/. loc. cit. vol. I, part 2. p. 640; J. Martin, An account... /cited in English/. loc. cit. II. p. 282.

have long since been replaced by razor blades which can be bought on most of the islands. However, not all Tongans own a safety razor. Many shave simply with the blade held in their hand, which is more a scraping than a cutting, and is reminiscent of the pumice stone. Even in the smallest village a great many natives are generally neatly shaved, some have a stubble varying in length (101)

101. On Sundays, however, even the latter are almost always smoothly shaved.

302 and a few wear more or less well cared-for full beards. This state
565 of affairs seems in general to resemble the pre-European era, though the commoners in olden times probably groomed themselves less carefully than the nobles. (102)

302 102. Cf. W. Ellis, An authentic narrative...
177 /cited in English/. loc. cit. I p. 92; if the
113

101: Clark K-4,5 (1974) 1978 OU9 Tonga OU9

The majority of population, social, political and economic activity is found on Tongatapu centering on the capital, Nuku'alofa.

The distance over which the islands are spread allows some variety in climate. Temperature is, on the whole, equable. The absolute maximum seldom rises above 90°F or falls below 80°F. The temperature minimum seldom reaches above 70° or falls below 50°F. For most of the year the mean temperature is between 70° and 80°F. As is often the case in tropical locals, seasonality is measured in terms of wet and dry periods. Rainfall in Tonga occurs on the average of 170 days during the year in progressively heavier amounts northward (Table 27). The wet season spans the months from December to April. Dryer periods and occasionally droughts occur from May through November. Overall averages for rainfall vary from 67" in the South, to 117" in the North.

Coupled with the advantages of a warm temperature range and an adequately distributed rainfall, Tonga possesses a third basic agricultural necessity, rich soil.

TABLE 27.--Mean Annual Rainfall: 1932-1940.

Tongatapu	65 inches
Ha'apai	67 inches
Vava'u	75 inches
Niua Toputapu	95 inches
Niua Foou	121 inches

SOURCE: Pacific Islands, Vol. III: Western Pacific (Tonga to Solomon Islands) (Washington: Naval Intelligence Division, 1944).

102: Brierly T-3 (1850) 352
OU9 Ton a OU9
Tonga apu

VI.—*Brief Geographical Sketch of the Friendly Islands, with an Account of the Visit of H.M.S. Meander, Captain the Hon. Henry Keppel, to the Island of Tongatabu, June*, 1850. By O. W. Brierly, Esq., F.R.G.S.

Read December 8, 1851.

The *Friendly Islands.*—The Friendly or Tonga Islands consist of three separate groups, and are situate in the Pacific, between 18° and 23° S. latitude, and 173° and 176° W. longitude.

There are said to be in all more than 150 islands; 15 of which rise to a considerable height, 35 are moderately elevated, and the rest are low.

The most southern group (the Tongatabu Islands) was discovered by Tasman in 1643. The Island of Tongatabu is the largest of these, and is about 20 miles long by 10 wide at its broadest part. The general surface of the island, with the exception of a few hillocks varying from 30 to 40 feet in height, is nearly a dead level; the highest part of the island is a small mount about 60 feet above the level of the sea on the northern side.

The Central, or Haabai Group, is composed of a considerable number of small islands, the most populous being Lifuka, about 8 or 9 miles long by 4 broad. The islands of this group are very fertile, some of them are low, others are of considerable height, and among the latter are Tofua and Kao. Tofua has an active volcano.

The Vavau Islands form the most northern group, and are somewhat larger and higher than the Haabai Islands. Vavau is a fine island, about 36 miles in circumference; its surface is uneven, and on the northern side it rises to considerable elevation.

The climate of the Friendly Islands is humid, and the heat rather oppressive, rising frequently to 98° in the shade. Much rain falls periodically. The trade winds are not constant, and westerly winds occasionally blow in every season.

Very heavy dews fall at night, and the transitions from heat to cold are very sudden. Hurricanes are frequent, scarcely a season passing without them. The months of February and March are those in which they occur, but they have been known to take place in November and December.

The storms begin at N.W., going round to the E., and ending in S.E.; the wind continues to increase until it becomes a hurricane, and is frequently observed to change almost immediately from one point to the opposite. In the same group of islands trees have fallen during one gale, some to the S. and others to the N. Earthquakes are also frequent.